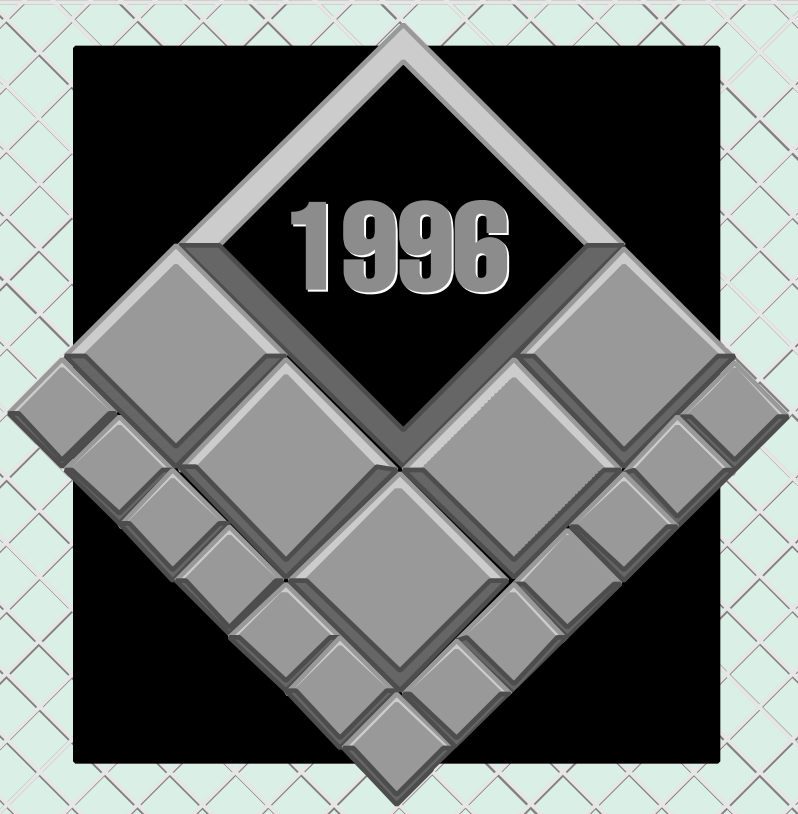


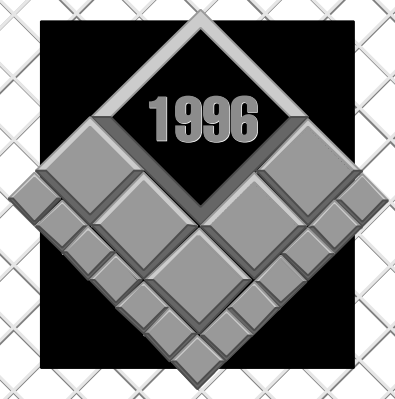
GEORGIA SOLID WASTE MANAGEMENT ANNUAL REPORT

and

Five-Year Progress Update

GEORGIA DEPARTMENT OF
COMMUNITY AFFAIRS

JULY 1997



GEORGIA SOLID WASTE MANAGEMENT ANNUAL REPORT

and

Five-Year Progress Update

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F O R E W O R D

In 1990, green boxes and small, unlined landfills dotted Georgia's landscape. Many landfills were running out of space, and others faced closure because they did not meet the new regulations. It appeared that remaining landfill capacity would not see the state through the decade. In many cases, conserving space through recycling was not an option because convenient opportunities did not exist.

While solid waste planners recognized a need to ensure sufficient capacity, landfill regulators foresaw new, more stringent federal regulations. Though the new rules would make landfill disposal safer, they would make acceptable disposal facilities both more difficult to site and more expensive. To reduce dependence on landfills and to conserve existing space, the Georgia General Assembly issued a challenge: reduce the amount of solid waste entering Georgia landfills by 25 percent over five years.

Georgia—and Georgians—took action. The State focused on revamping the comprehensive solid waste management system through planning, education, and regulatory compliance. Many local governments implemented improved waste collection services, making recycling more reliable and convenient in the process. Solid waste education efforts and municipal and home composting programs joined forces with recycling activities to divert materials from disposal. Though recycling markets fluctuated during the period, the industry blessed our state with stronger markets than in many parts of the nation.

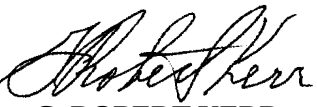
Many Georgia communities have told us they exceeded the Legislature's goal, but the state as a whole did not. The challenge did, however, initiate a period of change and improvement in the state's system of solid waste management. The way Georgia communities manage the materials they used to throw away has evolved dramatically. As we continue striving for waste reduction and safe, adequate disposal capacity, the lessons brought by the last five years can only help us in our task.

As we reach the five-year mark in our state's struggle to improve our solid waste management system, we offer an expanded annual report. It depicts two views of solid waste management in Georgia: First, a sort of moving picture shows the changes and trends in Georgia's system of solid waste management since 1992, the base year for the waste reduction goal. Then a snapshot of the state's solid waste management practices in the 1996 fiscal year gives more specific information on where the state is today. We also offer direction for the state's future system of solid waste management.

Georgia's approach to solid waste management has matured significantly over the last five years. We hope you will join us in the next five years and beyond as we strive for even greater advances.

JIM HIGDON
COMMISSIONER
GEORGIA DEPARTMENT OF
COMMUNITY AFFAIRS

HAROLD REHEIS
DIRECTOR
ENVIRONMENTAL
PROTECTION DIVISION
GEORGIA DEPARTMENT OF
NATURAL RESOURCES



G. ROBERT KERR
DIRECTOR
POLLUTION PREVENTION
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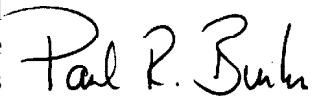


PAUL R. BURKS
EXECUTIVE DIRECTOR
GEORGIA ENVIRONMENTAL
FACILITIES AUTHORITY

ABOUT THIS REPORT

Purpose

The Georgia Comprehensive Solid Waste Management Act requires that the Department of Community Affairs (DCA), with the cooperation of the Department of Natural Resources' Environmental Protection Division (EPD) and the Georgia Environmental Facilities Authority (GEFA), provide an annual report on the status of solid waste management in Georgia to the Governor and General Assembly {O.C.G.A. § 12-8-31 (d)}. Because Fiscal Year 1996 (FY96) marks the fifth year of reporting, this report presents a five-year overview of solid waste management in Georgia in addition to offering detailed information for the period of July 1, 1995 to June 30, 1996. As specified in the Act, the report contains information on:

- the status of local and regional solid waste planning in Georgia;
- the number and types of solid waste handling facilities in Georgia;
- the remaining permitted capacity of each permitted solid waste handling facility;
- the number and types of solid waste grants and loans made to local governments;
- a compilation and analysis of solid waste management data provided by municipalities and counties in their annual reports;
- a statement of progress achieved in meeting the 25% waste reduction goal established in subsection (c) of Code Section 12-8-21;
- a statement of progress achieved in solid waste management education;
- any revisions to the State solid waste management plan deemed necessary; and
- recommendations for improving the management of solid waste in the state.

In the Following Pages…

This annual report is divided into three sections. The Five-Year Overview describes seven trends in Georgia's system of solid waste management and gives the status of the government solid waste planning that occurred during the period. This section also discusses new approaches to solid waste management undertaken by the State over the past five years as well as new directions for future consideration. The second section offers a snapshot of local government solid waste management in FY96. Its conclusions are based primarily on DCA's Solid Waste Management Survey and Full Cost Report. Information in the "Disposal Facilities" and "Remaining Permitted Capacity" portions was provided by EPD. The final section details State-level solid waste management education, technical assistance, and funding efforts. The appendices provide greater detail on Georgia's landfills, State funding efforts, and additional research undertaken by State agencies.

For the first time, the annual report is also sprinkled with success stories from Georgia's communities. Though these case studies represent only a small portion of the exemplary programs being undertaken throughout the state, they are intended to recognize all Georgians for their extraordinary efforts at better managing the state's solid waste.

Please note ☞ Some municipalities and counties that did not respond prior to publication of the four previous annual reports complied with the reporting requirements later. These late responses have been incorporated into DCA's database, sometimes leading to slight discrepancies between historical figures shown in this report and numbers reported in previous years.

Because local governments could select more than one option on many survey questions, some tables may show percentages with totals in excess of 100 percent.

FIVE-YEAR OVERVIEW

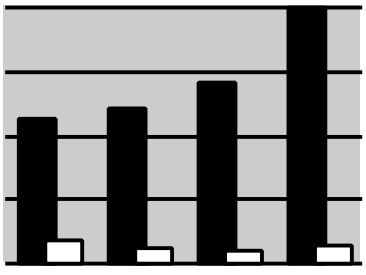
The Solid Waste Survey and Full Cost Report serves as the main source of information on Georgia's solid waste management system. Since the Department of Community Affairs (DCA) issued the first full survey in 1992, 99% of the state's municipalities and counties have consistently returned forms. Though the survey has been adjusted over the years, its questions have consistently fallen under five main categories: solid waste collection, waste reduction activities, solid waste disposal, public education, and full costs of providing solid waste services. Information from the Georgia Environmental Protection Division (EPD) supplements the local government survey responses by reporting the number of landfills in the state, the amount of waste each receives, and the remaining capacity of each.

SEVEN TRENDS EMERGE FROM INFORMATION GATHERED BETWEEN JULY 1, 1991, AND JUNE 30, 1996:

TREND 1 Georgia has fewer and safer landfills, with greater capacity.

In FY92, Georgia reported having 181 municipal solid waste (MSW) landfills. (The first report did not include construction and demolition landfills.) In that year, only 3% of the state's solid waste was disposed of in lined landfills. Since the end of FY92, 93 MSW landfills and 26 construction and demolition (C&D) landfills have closed. During that time, EPD issued permits for the expansion or opening of 35 MSW landfills and two C&D landfills. Some MSW landfills have converted to C&Ds, further altering the makeup of Georgia's disposal facilities. At the end of FY96, Georgia had 101 MSW landfills and 35 C&D landfills. About 75% of the state's 1996 capacity was lined, with 65% of municipal solid waste going to lined facilities.

Though Georgia had fewer landfills and was discarding more waste in FY96, the state's remaining disposal capacity had increased. Many of the closed landfills had capacity only to meet the needs of a limited geographical area, while the newer landfills are often large enough to accommodate an entire region's waste. In FY92, EPD reported that the average remaining capacity of Georgia's 181 MSW landfills was 4.5 years. In FY96, the average remaining capacity for both MSW and C&D facilities was about 14 years. Total remaining capacity for both types of landfills was 11 years, exceeding the goal of 10 years' capacity set in the 1990 State Solid Waste Management Plan.



Remaining Landfill Capacity (Cubic Yards x 1,000,000)

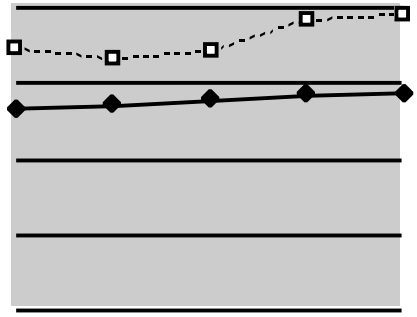
TREND 2 Georgians dispose of more waste now than in 1992.

When the Solid Waste Management Act set a goal of reducing the amount of solid waste disposed of in Georgia landfills by 25%, FY92 (July 1, 1991 - June 30, 1992) was set as the base year. Using FY92 as the base year created problems because most local landfills did not have scales or trained personnel to measure incoming waste. Only 25 facilities reported to EPD in that year, so the numbers were combined with those reported to DCA in the local government survey to produce an estimate of waste disposed of in the state's landfills. The local government responses were often inaccurate, particularly when a private vendor provided collection services or when no collection services were provided at all. In fact, 1994 was the first year in which the data were of high enough quality to reliably measure statewide waste disposal. This was the first full fiscal year in which all disposal facilities—public and private—were required to report quarterly to EPD and had scales to measure waste. It is likely that waste disposal data for FY92 undercounted waste disposed of because of these data collection limitations. The waste disposal figures should be viewed with these limitations in mind.

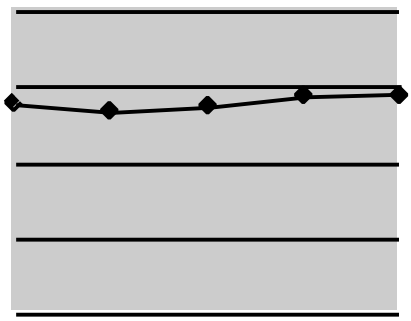
The base-year figure was further adjusted to reflect waste reduction efforts already undertaken by 35 local governments. The Act provided that counties and municipalities that could demonstrate and document a reduction effort prior to the end of FY92 could be given credit for reductions they had achieved. By adding these waste reduction credits into the base year figure, the State accounted for progress that was made in waste reduction prior to the establishment of the statewide goal. The adjusted base year disposal figure is 8,604,115 tons or 7.11 pounds per capita per day. Hence, to meet the 25% reduction goal, the state would have had to reduce waste disposal to 5.33 pounds per capita per day by July 1, 1996.

Though solid waste disposed of was apparently reduced from FY92 to FY94, it increased in FY95 and FY96. At the end of the five-year period, Georgia's pounds per capita per day disposal figure had increased by 4.5% to 7.43.

Population/ Waste Disposed (annual figures in millions)



Per Capita Waste Disposal
Pounds per Day



The accompanying graphs illustrate the growth in solid waste disposal. Please note that the tonnages reported for FY93 through FY95 have been adjusted from those reported in previous years to reflect late reporting and corrections in reporting. Additionally, tonnage disposed of by Georgia's only waste-to-energy facility, located in Savannah, was subtracted from these figures per a 1993 amendment to the Solid Waste Management Act {O.C.G.A. 12-8-21(c)} that exempted solid waste disposed of at this facility from being counted as municipal solid waste. Though excluding the waste-to-energy facility reduced the total tons disposed of by an average of about 132,000 tons, the upward trend in disposal was unaffected.

Three primary reasons for the disappointing reduction figure have been identified. The first problem, as discussed above, was the inability to measure waste reduction progress adequately. In

addition to the lack of scales and trained operators, many landfills were removing recyclables from the waste stream *after* weighing, so that recyclables were being counted in the disposal totals.[1] Second, because the strategy for achieving waste reduction involved primarily local governments, efforts focused on reducing residential waste. Subsequent surveys have shown that the majority of the waste stream is made up of commercial and industrial waste. Finally, robust economic and population growth, Olympic construction, and the devastating floods that inundated large portions of the state in the summer of 1994 resulted in much higher amounts of waste disposed of than anticipated.

During the first part of the five-year period, it appeared that out-of-state waste would grow to have a significant impact on the state's ability to reach its waste reduction goal. Though FY92 figures are not recorded, the amount of waste brought in from out of state grew 51% from FY93 to FY95. Because of interstate commerce laws and the profit-making orientation of private landfills, there is limited ability to manage out-of-state waste. However, the rate of growth in out-of-state waste disposal appears to have slowed. From FY95 to FY96, the rate of growth was only 4%, and FY96 out-of-state waste made up less than 2% of the total tons disposed of in Georgia.

[1] From the 1996 Landfill Operators Survey. For more information on the survey, see Appendix C.

City of Covington and Newton County: Reaching the Goal

When the Solid Waste Management Act passed in 1990, Newton County residents immediately began taking steps to assist the State in achieving the 25% reduction goal. The County reports that, by the end of FY96, its residents had reduced the per capita amount of waste going to landfills by 25.9%.

To meet their goal, the County and municipalities developed the infrastructure to give residents opportunities to recycle, then focused on waste reduction education. Early in the process, the City of Covington and Newton County developed a staffed recycling center. Later, Covington and Oxford implemented curbside recycling programs.

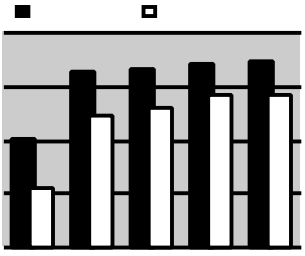
Meanwhile, Covington/Newton County Clean & Beautiful dispatched Miss Dew Drop, a Southern belle with a trash can lid for a hat, to the schools to explain recycling. The Clean and Beautiful programs reached up to 8,000 school children each year.

By 1995, the County had reduced waste by only 17%, leading to a logistical change. Through a low-interest GEFA loan, the County built staffed recycling facilities at compactor sites where residents took their waste, making a total of nine recycling centers. By making recycling just as convenient as throwing away trash, the improvement pushed the County beyond its goal.

TREND 3 Georgians have more opportunities to recycle.

In FY92, only 51% of counties and 28% of municipalities had recycling services available to residents in their jurisdictions. By FY96, 87% of counties and 71% of municipalities reported having recycling opportunities available, serving 94% of the state's population. Eighty-four percent of counties and 65% of municipalities reported having recycling services available for businesses in FY96, the first year the question was asked on the survey.

% of Local Governments with Recycling Services



Georgia's largest communities are most likely to have recycling services available. All but 12 of the 172 municipalities with populations of 2,500 or greater and all but one of the 54 counties with populations of 25,000 or greater had recycling services available in FY96. In FY92, only 98 of the largest cities and 41 of the largest counties had recycling services available.

Recycling services were not only more prevalent in FY96, but also more convenient. Curbside recycling was available in 31 more local government jurisdictions in FY96 than in FY93. Though curbside collection was available in only 15% of counties and

Recycling Services Available

1992		1993		1994		1995		1996		
C	M	C	M	C	M	C	M	C	M	
51	28	82	62	83	65	85	71	87	71	**% of Local Governments with Recycling Services**
NA	NA	14	32	13	34	10	30	15	35	**% of Above with Curbside**
NA	NA	85	79	91	77	84	47	89	75	**% of Above with Drop-Off**

C=County; M=Municipality

Hall County: Recycling/Waste Reduction

Hall County, named the National Recycling Coalition's Best Rural Program in 1994, has implemented an innovative and comprehensive waste reduction program. Its primary components include a materials recovery facility, 14 drop-off sites, and "Enviroshare," an information and materials exchange program.

Enviroshare targets the commercial and industrial sectors, which account for 85% of the County's waste stream. Businesses reduce solid waste through partnership exchanges, site visits, networking, and information sharing. After performing a waste audit, an Enviroshare team recommends alternatives for a participating business to reduce solid waste, such as marketing materials through the County's waste exchange program.

Hall County was the first to implement a countywide used oil collection program, a successful system used as a model for oil recycling programs around the state. The County also passed an ordinance that tripled the cost of disposing of corrugated cardboard in its landfill. More cardboard was recycled in Hall County in the first two months of the ordinance than in all of the preceding year.

A bilingual education system, with English and Spanish labels on recycling bins, helps all of the County's residents participate in waste reduction. Because Hall County took the initiative to implement a regional coalition, their program supports recycling in four other counties as well. The leadership demonstrated by Hall County has set a solid foundation for surrounding communities to build upon.

Monroe County: Solid Waste Collection

Monroe County's transition from green boxes to staffed Collection and Recycling Center sites eliminated about 200 green boxes scattered throughout the county and the unsightly illegal dumps that had accumulated around them.

The shift began in 1992, when the County established the first of eight staffed Collection and Recycling Centers. Now, all of the 17,000 residents are within three miles of a collection site. Illegal dumping has decreased, partly because the centers accept a wider range of items than the green boxes could accommodate. Residents no longer have to seek a dirt road to discard bulky items.

In addition to creating a better system of solid waste collection, the County wanted to reduce the amount of waste going into its new, expensive landfill. Each of the sites collects 12 different items for recycling. To increase participation, staff members talk with residents about recycling and composting when they visit the sites. As a result, the Collection and Recycling Centers have led to a 24% reduction in the County's residential solid waste stream.

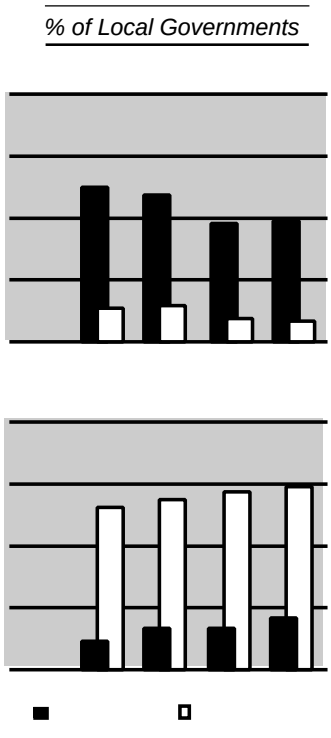
35% of municipalities with recycling, the service was available in almost all of the state's large local governments. These larger governments serve 50% of the state's population.

A survey of recycling companies commissioned by DCA during FY96 calculated the state's recycling rate at 33% for the 1995 calendar year. In other words, one third of the materials that would otherwise be disposed of in the state were recycled during 1995. When compared with recycling rates reported by other states for the same year, Georgia ranks among the top ten in recycling. Because the survey was conducted for the first time in FY96, it cannot be used to show progress in the state's recycling efforts. However, DCA plans to refine and repeat the survey to track progress in the future. (For more information on the recycling rate survey, see Appendix C.)

Local government efforts to reduce waste by diverting, mulching, or composting yard trimmings were not measured on the survey until FY95. That year, only 15% of Georgia's local governments disposed of yard trimmings in municipal solid waste landfills. In FY96, the number had dropped slightly to 12%. As of September 1, 1996—after the FY96 reporting period—yard trimmings were banned from lined and vertically expanded landfills. The effects of the ban's first year will be measured in the FY97 report.

TREND 4 Georgia residents have access to improved solid waste collection services, more often provided by private vendors than in 1992.

The green boxes that dotted the landscape in 1992 slowly diminished in number over the five-year period. These large, unstaffed collection bins were scattered throughout the countryside, often leading to unattractive and unhealthy collection sites. In FY93, the first year the survey asked the question, 99 counties and 68 cities reported using green boxes. By FY96, many local governments had replaced them with more centralized staffed and unstaffed drop-off centers or curbside collection.

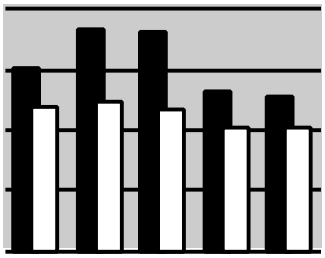


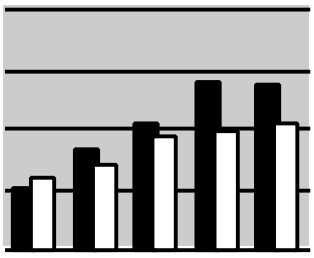
Though used by 77 counties and 44 cities in FY96, green boxes served just 22% of the state's population and were generally used by counties with populations of 25,000 or less. Use of curbside collection, a more convenient option, grew from 18 counties and 338 municipalities in FY93 to 34 counties and 389 municipalities in FY96. Backdoor collection increased slightly

for counties and remained stable for municipalities. Staffed collection centers are an important alternative in rural areas where curbside collection is not an option. Used by 25% of counties in both FY95 and FY96 (the only years the survey asked the question), these centers offer greater control and opportunities for charging residents based on the amount of solid waste they throw away.

The number of local governments using private vendors to provide solid waste collection services has increased significantly over the last five years, while governments providing the service themselves has decreased slightly, after an initial increase. Moving toward the use of private haulers is an important trend because it changes the role of local governments from one of providing services to one of overseeing contracts and service providers. Other provider options, which included working with another government or authority, remained stable during the five-year period.

% of Local Governments





TREND 5 Local governments are increasingly relying on private landfills for disposal, closing the landfills they once operated themselves and building transfer stations. The landfills they do control are more likely than before to be owned jointly with other governments or through an authority.

In FY92, only 10% of Georgia's counties and 11% of municipalities disposed of solid waste in a privately operated landfill. By FY96, 40% of counties and 24% of municipalities were using them. As expected, use of publicly owned facilities decreased during the period, falling from 90% of counties and 79% of municipalities to 69% and 71%, respectively.

Increased reliance on privately owned facilities came as local governments stopped operating their own facilities. From FY93 to FY96, 27 counties and 16 municipalities stopped operating municipal solid waste landfills (the 1992 survey did not ask local governments about the solid waste facilities they operated). Twenty-eight counties and two municipalities began operating transfer stations during this period. The transfer stations allowed these local governments to temporarily collect solid waste in centralized locations before transporting it to disposal facilities outside of their jurisdictions.

Waste Disposal Methods: % of Local Governments

1992		1993		1994		1995		1996		
C	M	C	M	C	M	C	M	C	M	
90	79	89	80	77	73	70	70	69	71	**Public Landfills**
10	11	11	12	24	18	41	23	40	24	**Private Landfills**
3	2	2	2	4	2	2	1	3	3	**Incinerators**

C=County; M=Municipality

SW Facilities Operated: % of Local Governments

1992		1993		1994		1995		1996		
C	M	C	M	C	M	C	M	C	M	
NA	NA	58	3	58	4	43	4	42	4	**MSW Landfills**
NA	NA	11	6	24	4	25	3	30	2	**Transfer Stations**

Statesboro/Bulloch County: Buying Landfill Space

In preparation for the impending closure of the MSW landfill owned by the City of Statesboro and Bulloch County, community residents approved a special local option sales tax (SPLOST) to finance construction of a new MSW landfill.

The City and County identified 63 potential landfill sites and then narrowed the list down to five for complete environmental and engineering assessments. After listening to strong opposition at a public hearing, the City and County began to investigate opportunities for a public-private partnership.

The two local governments identified an opportunity to purchase air space (rights to landfill space in the future) in a privately operated landfill in a nearby county. They compared the full cost of operating a landfill over 20 years, including expenditures for construction, operation, and closure, with the cost of purchasing the air space and hauling waste. The choice was clear: a private agreement would not only help them avoid local opposition, but would also save SPLOST dollars.

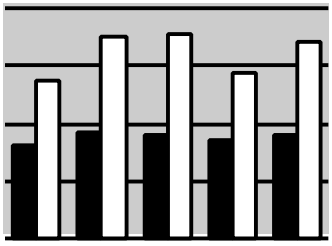
After receiving approval from the State Attorney General, the City and County now have the option of purchasing enough air space to guarantee disposal for five years or extending the air space purchase to cover 20 years' disposal needs. Purchasing this space will not only guarantee a place for disposal in the future but will also allow the City and County to pay a lower tipping fee at the facility.

Though municipalities and counties moved away from publicly owned facilities, those still controlled by local governments were more likely to involve multi-jurisdictional or authority participation. In FY92, only 5% of Georgia's local governments participated in a multi-county or authority landfill agreement. In FY96, the number had increased to 20%.

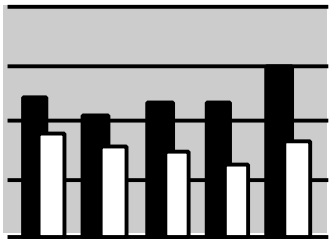
TREND 6 More governments are educating their residents on solid waste issues.

Though the number of local governments with solid waste education programs has not risen steadily over the last five years, 42 more governments reported having these programs in FY96 than in FY92. Counties reported spending an average of $23,200 on educational programs in FY95 and $23,770 in FY96. Municipalities reported spending an average of $14,770 in FY95 and $13,930 in FY96. Because the data was collected for only two years, no trend assessments on spending can be made.

Local Governments with Education Programs⇨



Percent of Local Governments with Education Programs Contributing Financially to Programs⇨

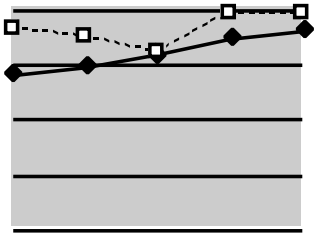


TREND 7 The full cost of solid waste management is rising.

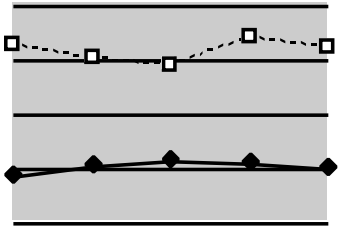
From FY92 to FY96, the full cost to local governments for solid waste management increased by 17%—from $260 million to $304 million—when figured in constant 1992 dollars. In actual dollars, the full cost of solid waste management increased from $260 million in FY92 to $340 million in FY96. When calculated correctly, full cost includes not only a local government's solid waste budget, but also an allowance for post closure care (if the government owns a landfill) and expenses for items that often are not charged directly to solid waste services in the budget, such as personnel administration or fleet management. Reported costs do not always include all of these elements.

Though the total full cost of solid waste management steadily increased over the five-year period, per capita cost did not follow a steady trend, whether figured in actual or constant 1992 dollars. In FY92, solid waste management cost counties $17.50 per person and municipalities $65.80 per person. By FY96, the number had increased by 18% for counties and decreased by 2% for municipalities (when calculated in 1992

Full Cost of SWM to Local Governments ($$$ millions)⇨



Per Capita Cost of SWM to Local Governments (1992 Constant $$$)⇨



constant dollars). In the interim, per capita cost fluctuated for both municipalities and counties (see chart).

Counties generally report lower full costs for two primary reasons. First, some counties may provide solid waste services to a limited population within their jurisdiction—perhaps just the unincorporated areas and a few municipalities. However, when calculating per capita cost, total county population (rather than that of the limited service area) is used, deflating the per capita cost. Second, municipalities generally offer more comprehensive collection services than counties, thus driving up their costs.

Local governments have increasingly relied on enterprise funds to account for the cost of providing solid waste services. Solid waste enterprise funds keep revenues and expenditures related to solid waste management separate from general funds or other local government funds. Supported by fees charged for solid waste services, the funds ideally become self-sustaining. Through improved tracking of expenditures and revenues generated by solid waste services, the establishment of an enterprise fund increases local government accountability for managing the services. In FY92, 62 local governments had established enterprise funds for their solid waste systems. They received $53 million in revenues and expended $59 million. By FY96, 114 local governments were managing their solid waste transactions in this manner, taking in a total of $142 million and spending $177 million. The difference in expenditures and revenues reflects that some solid waste activities may still be supported through transfers from other funds, even though an enterprise fund has been established.

Clayton County: Solid Waste Enterprise Fund

Since Clayton County started a solid waste enterprise fund in 1992, accounting for current solid waste expenditures and planning for the future have become easier. After just a few years, the fund generates enough money to finance solid waste operations, with excess money reserved to meet future needs.

Operating under an enterprise fund means that the solid waste management functions are run like a business, with all expenses being covered by service delivery revenues and tipping fees. After expenses are paid, remaining revenues are divided into three funds: landfill closure and postclosure, land and equipment depreciation, and cell development.

Having reserve funds shows that the County's Solid Waste Division is operating efficiently enough to compete with private service providers. The Division's success also helps justify expenditures on equipment that could further improve its operations.

The more businesslike approach to solid waste management brings an additional advantage, according to Clayton County Solid Waste Division Deputy Director Wayne Patterson. "The fund has taken a lot of the politics out of [solid waste management]," he said. "That's the number one benefit."

Counties are more likely than municipalities to have enterprise funds, with 30% of counties and 12% of municipalities having them in FY96. Though county enterprise funds are fewer in number, their revenues and expenditures are larger. In FY96, 48 counties spent $124 million and collected $94 million through solid waste enterprise funds. Funds in 66 municipalities spent $52 million and collected $48 million the same year. Larger local governments are more likely to have solid waste enterprise funds, with 66% of the largest counties (population of 50,000 and above) and 50% of the largest municipalities (population of 25,000 and above) using solid waste enterprise funds in FY96.

Enterprise fund information in this report was compiled from *The Report of Local Government Finances*, Georgia Department of Community Affairs.

Local and Regional Solid Waste Planning in Georgia

At the foundation of the state's progress in solid waste management lies a system of planning involving local, regional, and state government.

The Georgia Comprehensive Solid Waste Management Act, as amended, required all local governments in the state to have or be included in a solid waste management plan meeting DCA's Minimum Planning Standards and Procedures by July 1, 1993. Local governments not meeting this requirement would not be eligible for solid waste grants, loans, and permits. To meet the standards, a plan had to demonstrate a 10-year solid waste disposal capacity and handling capability, identify areas geotechnically unsuitable for solid waste facilities, and include a strategy for helping the State achieve its waste reduction goal. Plans had to be approved by DCA and then adopted by the local government. Of Georgia's 695 local governments, 675 (97%) had met this requirement by the end of FY96.

Dalton/Whitfield County: Planning for Solid Waste Management

Dalton-Whitfield County's local solid waste management plan, completed in 1992, contained well-defined goals and specified numerous improvements to be made over the ensuing ten-year period. Over the years, the City and County have used the plan as a guide in implementing the scheduled projects, including forming a solid waste management authority and constructing a Subtitle D landfill and carpet monofill.

Citizen involvement was a key component of the process used by Dalton and Whitfield County to develop the plan. The two governments formed the Citizens' Advisory Task Force (CATF), made up of representatives of local businesses, environmental groups, and the general public. CATF's main job was to guide the efforts of a consulting firm that had been hired to write the solid waste plan. The group's challenge was to develop recommendations in light of a highly industrialized economy and severe land limitations on new or expanded solid waste handling facilities. In mid-1992, the resulting solid waste plan became one of the first such plans to be approved by the State.

The CATF was so successful that it was reinstated to assist with an update of the plan in 1996. Because of citizen involvement, the update represented countywide opinions about solid waste and helped develop a sense of trust between the Authority and its customers.

The Act also requires applicants for solid waste permits, grants, and loans to demonstrate that the proposed facility or activity is consistent with the host local government's approved solid waste management plan. The host local government and all in-state jurisdictions generating waste destined for a proposed site must have a strategy toward meeting the state's reduction goal. However, failure of a host local government to make a good faith planning effort, as determined by DCA, cannot prevent a private solid waste facility from locating within the jurisdiction.

As of June 30, 1996, 160 plans covering 693 local governments (97% of Georgia's cities and counties) had been submitted for review to the appropriate regional development centers (RDCs) and DCA:

- 675 local governments had approved and adopted solid waste management plans and were eligible for solid waste grants, loans, and permits.
- 18 local governments had plans in the review process. All had been reviewed at least once by DCA but had not been resubmitted for final approval.

To assess potential impacts of new and expanding solid waste disposal facilities on surrounding jurisdictions, rules developed pursuant to the Georgia Planning Act require that such facilities be reviewed as Developments of Regional Impact (DRIs). In addition to ensuring that proposed projects are consistent with the comprehensive and solid waste management plans of all potentially affected jurisdictions, the DRI review process considers impacts on the region's natural resources, economy, and public infrastructure, as well as the public's ability to find housing reasonably accessible to places of employment. Ideally, the DRI review process also identifies opportunities for cooperation and recommends the construction of facilities that will serve more than one local government where appropriate.

Through the end of FY96, 18 proposed solid waste disposal facilities had been reviewed as DRIs, including 11 new landfills and three landfill expansions. Other projects reviewed included a biomedical incinerator, a large-scale composting facility, a waste processing facility, and a wastewater sludge treatment facility. All but two projects were found by the reviewing regional development center to be in the best interest of the state. One project was withdrawn during the review process.

The Act also requires RDCs to develop regional comprehensive plans, which must include solid waste management where it is considered by the RDC board to be of regional significance. To begin this process, RDC staff members prepare an inventory and analysis based on the local comprehensive plans developed within their region. Based on this document, the RDC board determines an implementation strategy, which becomes the functioning plan.

A total of 14 regional plans should be produced and adopted by June 30, 1998 (two groups of two RDCs are developing plans together). As of January 31, 1997, one regional plan had been adopted, and three staff documents were being reviewed by DCA staff. Each of these plans—the adopted plan and those in review—addresses solid waste management issues, though the references may be minimal.

New Directions in Solid Waste Management

It is clear that Georgia's system of solid waste management is safer and more comprehensive than it was when this decade began. Lined landfill capacity exceeds the minimum amounts deemed necessary at the beginning of the 90s. All landfills have scales and trained operators, so more is understood about the amount of waste and recyclables produced and how they are managed. State agencies will continue providing the technical assistance and compliance measures necessary to remain on a course toward safe disposal.

Reduction figures over the last five years have been disappointing, however, so State agencies have regrouped to find new approaches to managing waste. During the spring of 1996, DCA, EPD, GEFA, and the Pollution Prevention Assistance Division (P2AD) joined with the Association County Commissioners of Georgia (ACCG) and the Georgia Municipal Association (GMA) to assemble an **Intergovernmental Solid Waste Coordinating Council**. Since that time, other State agencies with solid waste and recycling responsibilities have joined the Council, including the Georgia Building Authority, the Department of Administrative Services, and the Department of Agriculture. The Council serves as a forum for coordinating activities, sharing information, and mobilizing State resources to achieve more effective solid waste management.

The Council has undertaken three primary initiatives to improve the state's solid waste management.

- In the spring of 1996, the four State agencies with primary solid waste responsibilities—DCA, EPD, GEFA and P2AD—agreed to a **memorandum of understanding (MOU)** concerning solid waste management responsibilities and disbursement of State Solid Waste Trust Fund monies. The 1990 solid waste legislation had assigned responsibility for permitting to EPD, planning and public education to DCA, and review and approval of solid waste-related loans to GEFA. The 1996 MOU addressed other solid waste responsibilities and incorporated P2AD, which did not exist when the original legislation was drafted. The sidebar contains a summary of each agency's responsibilities.

State Agency Solid Waste Responsibilities

Department of Community Affairs

- Provides technical assistance to local governments in solid waste management and waste reduction, including recycling, yard trimmings diversion, fee-setting, full-cost accounting, ordinances, contracts, etc.
- Educates the public in solid waste management
- Supports local Keep America Beautiful affiliates through the Georgia Clean and Beautiful program
- Facilitates partnerships for waste reduction and other waste management ventures
- Administers the annual local government solid waste management survey and prepares an annual report of statewide solid waste management activities
- Coordinates the state solid waste management plan update and administers local government solid waste planning activities
- Appoints and provides staff support for the Waste Reduction Advisory Council

Department of Natural Resources, Environmental Protection Division

- Regulates solid waste collection and disposal activities
- Offers technical assistance, especially in the areas of alternative waste disposal technologies, regulatory compliance, and code development and enforcement
- Administers the State Solid Waste Trust Fund, making available a portion to GEFA to distribute as grants to local governments and to assist DCA and P2AD waste reduction efforts
- Evaluates new waste handling technologies

Department of Natural Resources, Pollution Prevention Assistance Division

- Provides assistance in industrial, commercial, and institutional waste minimization
- Develops programs and activities to encourage businesses and industries to implement waste minimization measures
- Conducts industrial waste minimization planning
- Implements a household hazardous waste prevention and management program and a used automotive fluids management program

Georgia Environmental Facilities Authority

- Provides solid waste management loans and grants for local governments and solid waste authorities

- The Council addresses **funding issues for waste reduction projects**. Through the Council's efforts, more Solid Waste Trust Fund dollars have been put into grants for local government waste reduction activities. Several agencies now assist GEFA in reviewing grant applications to ensure that funds are being spent most effectively and are consistent with both the State and applicable local solid waste management plans. For each grant awarded, the Council assigns the appropriate agency to give technical assistance through the completion of the project. While the Council plans to continue cooperating on waste reduction expenditures, it will also explore options for a stable funding source for future waste reduction efforts.
- As a basis for targeting future efforts, the Intergovernmental Coordinating Council has undertaken a complete **review and revision of the State Solid Waste Management Plan**. The Council conducted a number of studies, including a survey of landfill operators, a survey to determine the state's recycling rate, and surveys dealing with household hazardous waste, recycling, and yard trimmings (see Appendix C: Additional Research). Additionally, the Council employed the Institute of Community and Area Development of the University of Georgia to conduct a series of individual focus groups involving local governments, local recycling coordinators, solid waste handling and recycling businesses, major commercial solid waste generators, environmental organizations, DCA's Waste Reduction Advisory Council, and State agency staff. Through these efforts, the Intergovernmental Council has recognized a need for new methods of tracking progress in solid waste management and waste reduction; improved technical and financial assistance to local governments; better implementation of local solid waste plans; and greater public education efforts. The University of Georgia's Carl Vinson Institute of Government is preparing the plan update.

In addition to working more closely with each other, State agencies have received increased input from Georgia citizens, local governments, business, and industry through DCA's **Waste Reduction Advisory Council**. The Council includes 21 members representing the waste and recycling industries, Georgia's Keep America Beautiful affiliates, environmental organizations, and local governments. They were appointed in May 1996 to assist DCA in developing and implementing waste reduction technical assistance and public education efforts. The Council also serves as the official advisory board for the Georgia Clean and Beautiful program. In its first year, the Council gave input on a full range of solid waste issues, including revisions to the State solid waste management plan, waste reduction and recycling grants, programmatic goals for local governments, recycling coordinator training, and the statewide litter campaign. Members are also considering legislative recommendations to place before the 1998 General Assembly. Their role in planning and their support of plan implementation will be critical in shaping the future of Georgia's system of solid waste management.

Through the renewed statewide planning effort and the work of the Intergovernmental Solid Waste Coordinating Council and DCA's Waste Reduction Advisory Council, several issues that the State must address in the future have emerged. These issues will form the basis of the State's activities over the coming years.

■ Increased focus on solid waste and recyclables produced by the commercial and industrial sectors.

During most of the 1990s, the State focused its waste reduction efforts on local governments, which primarily serve the residential sector. Because the networks for educating and assisting local governments were well established, solid waste management planners believed this approach to be the most direct and the most likely to elicit strong initial results. The approach was flawed, however, in that about 60% of the State's solid waste is produced by businesses and industries.

In 1993, the Legislature created P2AD, a division of DNR, to work with industries to reduce their generation of pollution. The 1996 MOU among P2AD, DCA, EPD, and GEFA gave P2AD primary responsibility for assisting and educating businesses and industries in solid waste reduction. The new Division represents a significant increase in the state's efforts to reduce waste from commercial and industrial sectors. Continued focus in this area must be an integral part of the State's approach to solid waste management.

- **Need for better tracking/data collection.**

  When the Solid Waste Management Act was passed in 1990, Georgia had very limited means of measuring waste deposited in the State's landfills. Though the Act required all landfills to install scales by 1992, some did not meet the deadline. By 1996, landfills had complied, and the amount of waste disposed of statewide could be measured with some confidence. However, waste disposal—and, thus, waste reduction rates—still cannot be measured accurately at a local or even regional level. The State is working to improve reporting methods and to ensure that more accurate information is provided. These efforts should continue.

  Another approach to measuring and tracking waste reduction progress is the recently completed recycling rate survey commissioned by DCA. This survey calculated the state's recycling rate at 33%. Though the study has received criticism for the materials included in calculating the rate, it provided useful data for measuring the state's recycling activity. The survey should be refined, expanded, and repeated to help the State track recycling trends in the future. (For more information on the recycling rate survey, see Appendix C.)

  To supplement the State's ongoing measurement of waste reduction efforts, P2AD has developed several mechanisms for measuring waste reduction within the businesses its staff has assisted. Businesses report the waste reduction steps they have taken, the savings incurred, and the tons of materials diverted from landfills after receiving an assessment from the Division. Companies may also participate in a certification program that both rewards and measures their efforts. Efforts to improve measurement of waste reduction in the commercial and industrial sectors also should continue.

- **Adjustment to the role of government as contractor with private companies rather than as service provider.**

  Historically, Georgia's local governments have directly provided solid waste management services to their residents. They often operated their own landfills, and municipalities provided curbside waste collection while counties often provided waste collection through green boxes. New environmental requirements, higher costs, and increased demands from residents have led more local governments to turn to the private sector to provide these services. To ensure that their residents have effective, reasonably priced and dependable solid waste management services, many local governments must now be able to develop requests for proposals (RFPs), franchise agreements, and private service contracts. They also must be able to monitor service delivery and to take corrective action when services are inadequate.

  The State must meet the changing role of local governments by altering the types of technical assistance available. Assistance in writing and managing contracts and in dealing with private companies must become an integral part of the services available from the State.

A SNAPSHOT OF LOCAL GOVERNMENT SOLID WASTE MANAGEMENT IN 1996

Under the Comprehensive Solid Waste Management Act, each local government must submit an annual report to DCA documenting the status of its solid waste services. DCA collects this information through the Solid Waste Management Survey and Full Cost Report. In addition to forming the basis of the statewide annual report, the survey provides useful information for planning, evaluation, and public education purposes. Within 30 days of submitting its annual survey to DCA, each local government must publish a public notice listing the full cost of providing solid waste services to constituents within its jurisdiction. The notice is intended to demonstrate to citizens the true costs of providing solid waste services, thereby educating them on the need to manage waste properly and efficiently.

The 1996 Solid Waste Survey and Full Cost Report was disseminated to the state's 159 counties and 533 municipalities to cover the reporting period of July 1, 1995, through June 30, 1996 (FY96). The survey consisted of 36 questions designed to measure the level of solid waste services provided and the cost of those services. Each of the 159 counties responded to the 1996 survey. Of the 533 municipalities, 524 (98%) responded to the survey. The only governments failing to submit a survey during the time period covered by this report were Braselton, Damascus, Demorest, Millen, Naylor, Ranger, Shiloh, and Toomsboro, all with individual populations under 5,000. The City of Augusta was included with the Richmond County survey because the two governments consolidated half-way through the reporting period. Georgia's other two consolidated governments (Athens-Clarke and Columbus-Muscogee) were also treated as counties.

Marietta: Pay As You Throw

The City of Marietta began a variable rate solid waste collection program in 1994, when the Environmental Protection Agency funded a pilot program to compare methods of charging residents based on the amount of solid waste they throw away. After a year, a can method was adopted for the 10,500 households.

Marietta contracts with Browning-Ferris Industries (BFI) for the twice weekly collection of one trash can per household. The costs per month are $12 for one 32-gallon can, $16 for two cans, $21 for three cans, and $5 for each additional can. Some residents, particularly senior citizens, opt for a 20-gallon "mini-can" at a lower cost. Collection of recyclables is provided at no extra charge, but there is a cost for pick up of special items such as furniture. The program finances most of the solid waste management expenditures previously covered by taxes.

Though the pay-as-you-throw program helps solve financial problems associated with solid waste management, its primary purpose is to reduce the amount of waste the City sends to landfills. When combined with recycling opportunities and strong public education, the program succeeds in fulfilling this purpose. Even though Marietta added 375 households to collection routes in FY96, the City managed to reduce waste collected by 1.6% from the previous year.

Information from the survey has been divided into sections on Solid Waste Collection, Solid Waste Reduction, Waste Disposal, Solid Waste Education, and Full Cost of Solid Waste Management. The Waste Disposal section has been supplemented with landfill data provided by EPD.

Solid Waste Collection

Governments can use a variety of methods to arrange for collection of solid waste, including directly providing the service themselves, arranging for another local government or authority to provide the service, and working with private vendors. More than half of those arranging for collection service reported providing it directly (62%) and/or working with private vendors (64%). A significant number of these local governments (21%) arranged for provision of collection service by another local government.

The majority of Georgia's local governments (87%) arranged for solid waste collection services in their jurisdictions. While essentially all of these jurisdictions had residential collection, 58% of the counties and 68% of the municipalities also arranged for collection of commercial solid waste. The number of local governments making commercial solid waste collection available increased by about 5% from FY95 to FY96; however, this data is available for only two years and is not sufficient to determine whether or not there is a trend toward more governments arranging for commercial collection.

In FY96, the preferred collection method in municipalities with residential waste collection was curbside pickup (83%). In counties with residential collection services, waste was most often collected using many large, unstaffed collection bins, commonly called green boxes, scattered throughout the county (60%). Though used by 77 counties, green boxes served just 22% of the state's population and were generally used by counties with populations of 25,000 or less.

Since FY93, the first year local governments reported available solid waste collection options, 22 counties and 24 municipalities have discontinued the use of green boxes. Because these unstaffed drop-off boxes can lead to unattractive and unhealthy collection sites and a lack of accountability for waste generation and disposal, minimizing their use is an important element in improving solid waste management in the state.

Of the local governments arranging for residential collection, 29% of counties and 72% of municipalities charged a fee for the service. Though the majority charged residents a flat fee, 15 counties and 11 municipalities reported charging residents a fee based on the amount of waste they throw away. These unit-based pricing systems make each user financially responsible for his or her disposal habits, thus encouraging waste reduction. According to the Southern States Energy Board, Georgia has more local governments using unit-based pricing systems than any other state in the Southeast.

The accompanying table summarizes methods of waste collection utilized by municipalities and counties. Because many governments selected more than one option, the percentages in some categories total more than 100%.

C	M	*Solid Waste Collection*
81	89	**Arrange for Solid Waste Collection[1]**
		Types of Collection Provided:[2]
58	68	Commercial
99	101	Residential
		Collection Method[3]
27	83	Curbside
9	29	Backdoor
32	4	Staffed Dropoff Center
15	5	Unstaffed Dropoff Center
60	9	Green Boxes
29	72	Fees Charged
73	97	Flat-Rate
41	3	Unit-Based
		Provide Collection Through:[2]
78	58	Own Government
85	58	Private Vendors
5	1	Authority
19	21	Another Government
3	1	Other

C=County; M=Municipality

[1] Percent of All Local Governments
[2] Percent of Governments Arranging for Collection
[3] Percent of Governments Providing Residential Collection

Solid Waste Reduction

Waste reduction can refer to a reduction in the amount of waste generated (source reduction) or in the amount of waste thrown away. One method of reducing the amount of waste disposed of is reusing material at the point of generation, in the home, office, or manufacturing facility. For examples, used clothes collections may be available in some communities. Fifteen counties (9%) and 15 municipalities (3%) reported that reuse programs are available for residents in their jurisdictions.

A higher-profile method of reducing waste is recovering material for recycling, or for use as a raw material in the production of a new product. In FY96, 87% of counties and 71% of municipalities reported that recycling services were available to their residents. Though the change over last year was insignificant, the number of local governments with recycling services available has more than doubled since FY92.

Businesses and industries had access to recycling services in 84% of Georgia's counties and 65% of municipalities in FY96, the first year the survey asked local governments this question. Because businesses and industries dispose of an estimated 60% of the state's solid waste, P2AD will focus future efforts on creating new opportunities to recycle in the workplace. As a result, the number of jurisdictions reporting that their businesses and industries have access to recycling services should increase in the future.

As with solid waste collection, municipalities and counties tend to rely on their own local government (53%) or private vendors (48%) to provide collection of recyclables. Unlike solid waste, recyclables are also likely to be collected by other local governments (34%) and not-for-profit organizations (32%). Counties rely on not-for-profit organizations more heavily than municipalities, with these organizations providing recycling services in almost half (46%) of counties. Because many local governments rely on more than one service provider, percentages total more than 100%.

Waste Reduction Efforts

	C	M
Purchase Recycled Products[1]	70	53
Reuse Programs Available[1]	9	3
Recycling Services Available For[1]		
Business & Industry	84	65
Citizens	87	71
Provide Collection Through[2]		
Own Government	76	44
Another Government	25	37
Private Vendors	54	46
Not-for-Profit Org.	46	26
Volunteers	23	9
Collection Methods[2]		
Curbside Recycling	14	35
Drop-Off Centers	89	75
Materials Recovery Facility	11	5
Other	18	8
Promote Home Composting & Grasscycling[1]	44	25
Governments Separating Yard Trimmings[1]	78	76
Yard Trimmings Disposal[3]		
Collect & Grind for Mulch	43	41
Collect & Compost	17	21
Collect & Dispose in SW Landfill	10	17
Collect & Dispose in Inert Landfill	41	29
Do Not Collect[1]	35	33

1 Percent of All Local Governments

2 Percent of Governments with Recycling Services Available to Citizens

3 Percent of Governments Separating Yard Trimmings for Disposal

C=County; M=Municipality

Most local government jurisdictions with residential recycling services offer drop-off collection of recyclables (75% of municipalities and 89% of counties). Though only 30% of local governments with residential recycling offer curbside collection, their jurisdictions include 50% of the state's population. Curbside collection is generally more costly for local governments, but it is more effective in garnering participation by residents.

Collection of newspapers for recycling is by far the most common in Georgia, available in 82% of counties and 86% of municipalities with recycling services. Aluminum, magazines, corrugated cardboard, glass, and plastic are also recycled in more than 50% of Georgia's municipalities and counties. Counties are more likely to recycle larger items that are more difficult to collect in a curbside program. These items are typically easily separated at transfer stations, staffed collection centers, and landfills, which are more often managed by counties. For example, 80% of counties with recycling services collect white goods (appliances), while only 35% of municipalities do. Counties are also more likely to collect Christmas trees, scrap metal, and tires. The table at the right lists selected recyclable materials and the percentage of local governments with recycling services collecting those items.

Materials Recycled (Percent of Local Governments with Recycling Services)

C	M	
9	4	Aerosol Cans
5	1	Agricultural Chemicals
77	71	Aluminum
33	9	Batteries
21	7	C&D Material
63	46	Christmas Trees
75	60	Corrugated Cardboard
60	64	Glass
61	56	Magazines
35	12	Motor Oil
82	86	Newspaper
46	39	Other Paper
28	17	Paper Board
42	35	Phone books
56	62	Plastic
70	26	Scrap Metal
41	28	Steel Cans
51	14	Tires
80	35	White Goods
9	5	Other

C=County; M=Municipality

More focused attention has recently been given to waste reduction through improved management of yard trimmings. As of September 1, 1996, each municipality, county, and solid waste management authority must require separation of yard trimmings from solid waste before collection and keep yard trimmings out of MSW landfills with liners/ leachate collection systems and those with vertical expansions.

Though the period covered by the FY96 survey ended before the yard trimmings ban became effective, most local governments had already taken steps to implement it. Two months before the ban, 124 (78%) counties and 400 (76%) municipalities were separating yard trimmings from solid waste. Thirty-three percent of Georgia's local governments, mostly those with smaller populations, simply did not collect yard trimmings. The second most common method of handling yard trimmings was to collect and grind them into mulch (31%). A significant number of local governments (24%) collected yard trimmings for disposal in an inert landfill. Though this option is not specifically banned, it is not listed in the legislation among the preferred methods for handling yard trimmings. Thirty percent of Georgia's local governments were promoting home composting and grasscycling.

Solid Waste Disposal

Local Government Practices

Overwhelmingly, Georgia municipalities (70%) and counties (69%) send their municipal solid waste to publicly-owned landfills. Counties are more likely to own the disposal facility themselves (44%), while municipalities are more likely to send waste to a facility owned by another government (66%). As public landfills have closed over the last five years, use of privately owned landfills has increased, particularly for counties. In FY92, only 15 counties reported sending some or all of their waste to private landfills. In FY96, 61 counties reported using them. A few governments used privately- or publicly-owned incinerators or shipped their waste out of state.

Sixty-six county governments and 13 municipalities operated MSW landfills in FY96. This was 42 fewer governments than in FY93, the first year the question was asked on the survey. As local governments, particularly counties, have closed their landfills, they have constructed more transfer stations. These facilities allow individuals and small haulers to bring their waste to a centrally located facility where it is collected and transferred to a landfill, often in a different county. In FY96, 47 counties (30%) and 19 municipalities (4%) operated transfer stations, almost double the number operated by local governments in FY93. The accompanying table shows the number of local governments owning different types of solid waste facilities. Though Georgia has only one municipal solid waste incinerator, several local governments reported operating incinerators. These were air curtain destructors, generally used to dispose of wood wastes, or biomedical incinerators.

All counties and all but two municipalities operating municipal solid waste landfills charged a tipping fee, with an average per ton charge of about $28 at county-owned facilities and $24 at city-owned facilities. Local governments were less likely to charge disposal fees at transfer stations, but the average transfer station tipping fee was higher than the average landfill tipping fee. Of the 19 municipalities operating transfer stations, only 4 (21%) reported collecting a fee, at an average charge of about $39 per ton. Thirty-five of 47 counties (74%) operating transfer stations charged fees, averaging about $31 per ton.

Local governments are encouraged to optimize their disposal options and minimize costs by coordinating their solid waste efforts through multi-county or authority landfill agreements. In FY96, 22% of counties and 20% of municipalities reported participating in these types of agreements. The average remaining life span of these agreements was 8.2 years for municipalities and 10.5 years for counties.

Percentage of Local Governments Operating Waste Facilities

C	M	
30	4	Transfer Station
6	0	Materials Recovery Facility
41	10	Inert Waste Landfill
16	1	C&D Landfill
42	2	Municipal Solid Waste Landfill
1	0	Incinerator

C=County; M=Municipality

Disposal Facilities

While the number of unlined landfills in Georgia has decreased since FY95, the number of facilities overall has increased. Only tons disposed of in MSW landfills and C&Ds are counted when calculating progress toward achieving the 25% reduction goal. The number of these types of facilities has increased for two primary reasons. First, as many unlined landfills have closed, a few, safer Subtitle D landfills have opened to take the waste. Second, some of the MSW landfills converted to C&D facilities. Of the MSW landfills operating in FY96, 88 were owned by local governments and 13 were owned by private firms. Of the C&D landfills, 22 were publicly owned and 13 were owned by private firms.

Solid Waste Disposal Facilities in Georgia (6/30/96)

	1996	1995*
MSW Landfills:	**101**	**99**
Subtitle D and Lined**	35	28
Unlined	66	71
C&D Landfills	**35**	**33**
Landfills That Ceased Receiving Waste	**13**	**11**
Industrial Solid Waste Handling Facilities:	**75**	**68**
Industrial Waste Landfills	59	
Industrial Waste Incinerators	5	
Other	11	
Permit-by-Rule Facilities:	**2,210**	**1,910**
Inert Landfills	1,633	
Transfer Stations	106	
Collection Operations	352	
Other	119	
Waste-to-Energy	**1**	**1**
Additional Facilities:	**4**	**2**
Materials Recovery Facilities	2	0
MSW Composting Facilities	2	2

Inert landfills, which are permit-by-rule facilities, accounted for 243 new facilities in FY96. These are often very small landfills at construction sites and are used only for the duration of a construction project. Users of this type of disposal method are simply required to notify EPD; they do not go through a full permitting process. The drastic increase in number could have been caused by increased development and/or by an increase in reporting by developers. The actual number of inert landfills may be lower than reported here because EPD may not always be notified of closure of these facilities. The May 1996, implementation of the open burning ban, which prohibits open burning of construction and land-clearing debris in the metro-Atlanta area during the summer months, probably will increase the need for inert and C&D facilities in the future.

* Solid waste disposal facilities were incorrectly reported in the *1995 Solid Waste Management Annual Report*. The corrected figures are reported here.

** Subtitle D landfills are built to current EPA requirements. Some lined landfills were built before the Subtitle D landfill regulations were completed and may not meet all of the requirements. In 1996, 22 of Georgia's landfills met Subtitle D requirements.

Remaining Permitted Capacity of Solid Waste Disposal Facilities

From FY95 to FY96, the remaining capacity of Georgia's municipal solid waste landfills and construction and demolition landfills increased by 42%. In FY95, 88% of the state's landfills reported a remaining capacity of 151,219,768 cubic yards. In FY96, 85% of the state's landfills reported 214,322,055 cubic yards of remaining capacity. The increase was generated by newly constructed and opened facilities.

While landfill capacity expanded significantly, the rate-of-fill grew only minimally during the fiscal year. From FY95 to FY96, the rate-of-fill increased by about 2%, from 50,317 to 51,133 cubic yards per day. Based on current data, there are about 14 years remaining to fill existing landfills.

The number of years it will take to exhaust existing landfills will likely grow as newly permitted and constructed landfills open within the next year. Facilities opening in the first half of FY97 increased capacity by 9.8 million cubic yards. An additional 57.9 million cubic yards of landfill space were under construction at that time.

Appendix A shows the 1996 remaining permitted capacity and the estimated fill dates of reporting sites.

Solid Waste Public Education

In FY96, 56% of counties and 32% of municipalities reported having public education programs. Of these programs, 66% of counties and 72% of municipalities reported being part of DCA's Georgia Clean and Beautiful program (GCB), the State affiliate of Keep America Beautiful, Inc. (KAB). Counties and municipalities conducting solid waste education campaigns reported spending an average of $23,560 and $14,140, respectively, on these programs.

Beyond the data presented above, DCA does not ask local governments to provide measurement of public education efforts. As a result, education efforts cannot be quantified statewide. However, KAB affiliates are required to report their public education efforts to the national KAB office. The efforts in these communities can be used to exemplify the types of public education being undertaken around the state.

In FY96, Georgia's 57 KAB affiliates reported making 817 classroom presentations and conducting 52 teacher training sessions. Their programs and/or waste management messages were advertised or discussed in 3,850 radio spots and 2,174 print placements. They involved 250,209 volunteers in their programs, and those volunteers contributed 1,868,924 hours of work.

KAB affiliates measure the effectiveness of their anti-littering education efforts by taking an annual photometric index. The FY96 index showed that litter along the streets in these communities increased. However, one community had a large increase that skewed the results. When that community's index is removed, the litter decreased by an average of 15% in Georgia's KAB communities. The affiliates sponsored 6,612 litter cleanups and 123 litter-free events in FY96.

Athens-Clarke County: Pay As You Throw

Since September 1995, Athens-Clarke County has participated in a pay as you throw (PAYT) program in which residents and businesses are charged for solid waste collection according to the amount of waste they discard. To help customers reduce their costs, ACC has provided more opportunities to recycle, such as accepting more materials and establishing six user-friendly recycling centers.

To make the program successful, ACC has had to educate both the residents and businesses about the new system. Media tools such as newspaper articles, public service announcements and press releases were used.

ACC mailed information several months in advance of the program kickoff in order to prepare residents for the new system. A later mailing contained three pieces about the new program: a laminated card with color-coordinated magnets detailing what materials should be put into each recycling bin; a card detailing the new PAYT garbage program on one side and the new recycling program on the other; and a card giving the locations of the six area recycling drop-off centers where additional materials could be recycled.

For small businesses, ACC produced an educational kit using a recycled content corrugated cardboard folder with specifics of the small business PAYT and recycling programs and information on buying recycled products. Businesses also use the information to help educate their customers.

Crisp County High School freshman Ashley Musselwhite (center) won a $1,000 scholarship as Georgia Clean and Beautiful's Student of the Year.

BFI and the Marietta Clean City Commission hosted "Green Games" for elementary school students.⇨

Students at J.M. Odum Elementary School created an outdoor classroom.

Full Cost of Solid Waste Management

Full Cost of SWM for Local Governments

The Solid Waste Management Act requires each local government to calculate and publish its full cost of providing solid waste management services for the most recent fiscal period. When calculated correctly, full cost includes not only the solid waste budget, but also an allowance for post closure care (if the government owns a landfill) and expenses for items that often are not charged directly to solid waste services in the budget, such as personnel administration or fleet management. Reported costs do not always include all of these elements.

	Population Group	Number Reporting	Average Expenditures	$$$ Per Capita
C	≥100,000	11	6,272,422	20.39
	50,000 - 99,999	21	1,390,058	19.19
	25,000 - 49,999	22	1,195,928	34.06
	15,000 - 24,999	39	568,488	29.13
	10,000 - 14,999	25	345,217	28.23
	≤ 10,000	41	185,944	27.63
	All	159	1,024,676	23.21
M	≥50,000	6	10,504,711	75.75
	25,000 - 49,999	8	2,659,524	79.44
	10,000 - 24,999	39	1,145,342	76.98
	5,000 - 9,999	40	488,246	71.36
	2,500 - 4,999	77	226,118	65.04
	1,000 - 2,499	101	78,707	54.49
	500 - 999	89	19,748	33.71
	≤ 499	165	8,566	46.05
	All	525	337,208	72.25

C=County; M=Municipality

Georgia's local governments reported a full cost of $340 million for solid waste services in FY96, up from $324 million in FY95. On a per capita basis, the full cost of solid waste management equaled $23.21 for counties and $72.25 for municipalities.

Georgia's 17 largest local governments accounted for 39% of total solid waste management expenditures and 44% of revenues. Fifty-four counties with populations of 25,000 or more accounted for 76% of county expenditures and 85% of county revenues. Ninety-three municipalities with populations of 5,000 or more accounted for 84% of municipal expenditures and 86% of municipal revenues. The accompanying table summarizes the average and per capita costs for different sized governments.

Note that while the table summarizes per capita costs for counties and municipalities of various sizes, exact cost comparisons among governments are not possible for four primary reasons:

- First, some counties may provide solid waste services to a limited population within their jurisdiction—perhaps just the unincorporated areas and a few municipalities. However, when calculating per capita cost, total county population (rather than that of the limited service area) is used, deflating the per capita cost.
- Second, governments provide varying levels of solid waste services. Costs from governments providing only minimal collection services are combined and compared with those from governments providing more convenient and frequent collection. Generally, municipalities offer more comprehensive collection services than counties, thus driving up their expenditures.
- Similarly, costs from governments providing collection services themselves are combined and compared with those from governments in which residents contract with private haulers individually. Though taxpayers pay for solid waste collection in either type of jurisdiction, the full cost report will be lower in jurisdictions where residents pay part of the costs directly to the provider.
- Finally, survey respondents apply varying methods to calculate the full cost of providing solid waste services. Though DCA offers full cost accounting tools for local governments, it is evident from the responses that some simply list their solid waste budgets. Their per capita costs will appear to be lower than those for governments considering the true full cost of providing services.

Counties and municipalities spend their solid waste dollars somewhat differently. At 68% of total costs, collection services comprise the majority of solid waste expenditures

for municipalities. Counties spend the largest portion of their solid waste dollars on disposal (56%). For all local governments combined, solid waste collection is the costliest item at 54% of total costs, followed by disposal (40%); recycling, composting and mulching (5%); and public education (1%). Though municipalities serve only about 35% of the state's population, their total costs comprise 52% of the state's full costs for solid waste management.

Solid Waste Costs: Percent of Total Expenditures

C	M	
39	68	**Collection**
4	6	**Recycling**
56	25	**Disposal**
1	1	**Public Education**

Many local governments charge collection and tipping fees for their solid waste management services (refer to the Solid Waste Collection and Waste Disposal sections of this report). However, the revenues do not cover all solid waste management expenditures. According to their full cost reports, municipalities recover 85% of their operating costs through these fees, while counties recover 78% of their costs through fees. Generally, the state's larger local governments recover more of their costs than smaller governments. Six municipalities with populations of 50,000 or more recover 92% of their costs through revenues, and 11 counties with populations of 100,000 and above recover 95% of their expenditures. The 41 counties with populations of less than 10,000 recover only 40% of their solid waste expenditures through fees, relying heavily on general funds to cover costs.

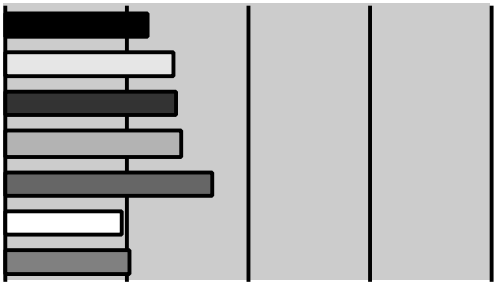
Solid Waste Revenues: Percent of Total Revenues

C	M	
44	86	**Collection**
3	2	**Recycling**
52	11	**Disposal**
1	1	**Public Education**

C=County; M=Municipality

The largest portion of county solid waste revenues comes from disposal fees (52%), with collection fees also making up a significant portion (44%). For municipalities, where collection services are generally more comprehensive, collection fees contribute 86% of total solid waste revenues. Disposal fees make up only 11% of municipal solid waste revenues.

County Per Capita Expenditures ($$$)



Municipal Per Capita Expenditures ($$$)

Local governments have often cited cost as the primary obstacle to recycling and waste reduction efforts. Though only a small percentage of solid waste expenditures goes toward recycling, an even smaller amount is recovered in revenues. In FY96, local governments reported spending $17.2 million on recycling, composting, and mulching. They received $6.5 million in revenues from their efforts, just 38% of their waste reduction expenditures.

STATE SOLID WASTE MANAGEMENT EFFORTS IN 1996

Solid Waste Management Education and Technical Assistance Strategies

Public education is a key component of the state's solid waste management effort. The Act states that it is "the policy of the State of Georgia to educate and encourage generators and handlers of solid waste to reduce and minimize to the greatest extent possible the amount of solid waste which requires collection, treatment, or disposal" {O.C.G.A. § 12-8-21(b)}. Georgia's State agencies have developed several strategies for educating citizens, local governments, and businesses on proper solid waste management:

INVOLVE GEORGIA CITIZENS IN PROPER SOLID WASTE MANAGEMENT ACTIVITIES THROUGH SPECIAL EVENTS. THESE EDUCATIONAL ACTIVITIES GIVE GEORGIA RESIDENTS HANDS-ON EXPERIENCE IN MANAGING SOLID WASTE PROPERLY, AND, BECAUSE OF THEIR HIGH VISIBILITY, THEY RAISE AWARENESS OF SOLID WASTE ISSUES EVEN FOR NON-PARTICIPANTS. IN FY96, THE STATE WAS INVOLVED IN TWO STATEWIDE SPECIAL EVENTS:

- The sixth annual "Bring One for the Chipper" Christmas Tree Recycling Program, held in 95 municipalities and counties in January 1996, collected 278,275 Christmas trees at 300 sites. Working with private sponsors, DCA's Georgia Clean and Beautiful program coordinated the event and provided publicity tools and tree seedlings for participants.
- Declared "Let's Keep Georgia Peachy Clean Week" by Governor Zell Miller, the week of May 13-19, 1996, attracted the involvement of 113 communities in a statewide litter cleanup effort. The 52 communities that reported results cleaned 610 roadside miles, 40 acres of land, and 91 illegal dumps with help from 3,564 volunteers. The volunteers contributed a total of 4,053 hours to fill 6,919 trash bags with litter and recyclables. The Georgia Peachy Clean Team, representing the Georgia Departments of Community Affairs, Natural Resources, Public Safety, and Transportation; the Georgia Environmental Facilities Authority; and the state's local Keep America Beautiful (KAB) affiliates, coordinated the event and provided supplies.

REACH RESIDENTS BY SUPPORTING THE STATE'S 57 LOCAL KAB AFFILIATES.

- DCA's Georgia Clean and Beautiful (GCB) program provided ongoing support to local KAB systems through two executive directors' conferences. The fall conference focused on fundraising, grant writing, and networking for the 52 attendees. The March 1996 meeting, attended by 32 executive directors, provided professional development training.
- A third conference, held in May 1996, offered training in board development, volunteer management, and fundraising for 98 KAB executive directors and local board chairpersons.
- Georgia Clean and Beautiful extends support beyond the KABs with its annual awards program. By recognizing individuals and organizations for recycling, composting, and environmental improvement efforts, GCB encourages excellence and innovation in solid waste management. In March 1996, at an awards luncheon funded entirely by corporate sponsors, 41 organizations and four individuals were recognized for their outstanding efforts.

RAISE AWARENESS OF PROPER SOLID WASTE MANAGEMENT PRACTICES AMONG GEORGIA RESIDENTS THROUGH MASS MEDIA CAMPAIGNS.

- Through the "Let's Keep Georgia Peachy Clean" campaign, Georgia's Peachy Clean Team produced three public service announcements focused on changing behaviors and attitudes about littering. The first spot, filmed in an urban setting, encouraged residents to show pride in the state by not littering. The second, featuring Georgia media personality LeRoy Powell, reminded viewers they probably would not litter "if their Mama was watchin'." The third spot featured heavyweight boxing champion Evander Holyfield at "Camp Evander," teaching children not to litter. The spots aired on cable stations throughout Georgia in purchased and contributed time spots. Corresponding posters and print advertisements reinforced the Peachy Clean message.
- Many of Georgia's mayors and county commissioners recorded public service announcements (PSAs) with litter and waste reduction messages for their local radio stations. DCA provided a recording technician and scripts at meetings of the county and municipal associations. Portions recorded by participating local officials were then combined with portions recorded by a professional announcer. The resulting localized PSAs were distributed to appropriate media outlets. Local government officials recorded messages encouraging people not to litter, reminding them of the upcoming yard trimmings ban, and promoting waste reduction.

ASSIST LOCAL GOVERNMENTS AS THEY IMPLEMENT WASTE REDUCTION PROGRAMS.

- Five State agencies—DCA, DNR (EPD and P2AD), DOAS, GBA, and GEFA—joined with the Association County Commissioners of Georgia and the Georgia Municipal Association to assemble an Intergovernmental Solid Waste Coordinating Council. The Council serves as a forum for coordinating activities, sharing information, and mobilizing State resources to achieve more effective solid waste management.
- DCA's waste management staff provided ongoing technical assistance to Georgia's local governments during FY96. Focal areas included recycling and education programs, yard trimmings management, full-cost accounting, variable rate systems, and solid waste related ordinances and contracts.
- At two Issues Forums held in May 1996, solid waste management and recycling professionals learned about legislative changes and regulatory issues facing the industry. Tours and a community showcase, in which area governments and businesses provided information on their recycling programs, complemented the agenda. The Georgia Recycling Coalition sponsored the forums with assistance from DCA.
- DCA developed a waste reduction slide presentation for communities considering developing recycling programs. Presentations of the slide show reached 15 communities.

TRAIN AND OFFER SUPPORT TO GEORGIA'S TEACHERS AS THEY EDUCATE THE STATE'S YOUTH ON ENVIRONMENTAL ISSUES.

- As an advocate of KAB's *Waste in Place* and *Waste: A Hidden Resource* curricula, DCA schedules, publicizes, coordinates, and funds teacher training workshops throughout the state. During the FY96, DCA provided training and curriculum guides to 332 classroom teachers, educational specialists, administrators, and AmeriCorps volunteers who have in turn taught an estimated 11,600 students.

DCA: Helping Local Governments Implement a Ban

In the months leading up to the September 1, 1996, yard trimmings ban, the Intergovernmental Solid Waste Coordinating Council realized that many local governments had not yet addressed the issue. In response, DCA distributed an information packet to all local governments.

The packet contained several tools for communities. In cooperation with the Georgia Municipal Association and the Association County Commissioners of Georgia, DCA prepared a sample ordinance for local governments to use to meet the minimum requirements of the yard trimmings law. To modify the sample ordinance for local adoption, a city and county had only to insert a description of the yard trimmings handling method it requires of its residents.

The packet also included the definition of yard trimmings, the suggested hierarchy for handling them, and the specific restrictions local governments and authorities were required to impose. In the weeks immediately following the distribution, DCA responded to more than 150 requests from local governments for additional guidance or technical assistance with some facet of the ban.

SUPPORT RECYCLING MARKET DEVELOPMENT BY ENCOURAGING BUSINESSES AND GOVERNMENT AGENCIES TO PURCHASE PRODUCTS MADE FROM RECYCLED MATERIALS.

- In September 1995, Georgia hosted one of four "buy recycled" conferences sponsored by the U.S. Environmental Protection Agency, Region 4, and the U.S. Conference of Mayors. As the largest of the four conferences, Georgia's program attracted more than 300 representatives from state, local, and federal government agencies and private companies. About 50 speakers served on panels to discuss quality and availability of different types of recycled products as well as procurement standards and practices. Thirty-six vendors exhibited recycled products. Truly an interagency effort, the conference was organized by DCA, EPD, P2AD, GEFA, GBA, and DOAS with representation from local and federal governments and private industry.
- DCA published the first edition of its "Buy Recycled...Buy Georgia" guide, a listing of 83 companies that manufacture or distribute recycled products in Georgia.

MINIMIZE THE GROWING WASTE STREAM GENERATED BY GEORGIA'S THRIVING ECONOMY WITH PROGRAMS AIMED AT BUSINESSES AND INDUSTRIES.

- P2AD provides waste reduction technical assistance to Georgia businesses and industries. Staff engineers and technical experts respond to requests by telephone, with information researched in the division's library or found on the World Wide Web. Where more extensive help is required, a staff engineer assesses a company's waste streams and identifies costs and benefits of various waste reduction options. In FY96, P2AD responded to 318 requests for technical assistance, with the majority coming from businesses (42%) and governments (20%).
- P2AD also provided general pollution prevention and waste reduction education to businesses and governments through participation in more than 50 workshops. In addition, a P2AD-sponsored workshop reached about 30 Georgia truck maintenance facility operators.
- DCA and P2AD continued to work with local representatives to conduct a *Waste in the Workplace* workshops. The half-day seminars focused on waste reduction and buy recycled activities. Company representatives learned to conduct waste audits at their businesses and were introduced to recycling resources in their community.
- In the spring of 1995, several local, state, and federal agencies (including DCA, EPD, GEFA, P2AD, the Department of Industry, Trade & Tourism, and the Cooperative Extension Service) joined forces with the Georgia Hospitality & Travel Association and the Metro Atlanta Chamber of Commerce to create the Georgia Hospitality Environmental Partnership (GHEP). GHEP, a resource management program for Georgia's hospitality and travel industry, made a successful debut through its pilot waste reduction program at the Westin Peachtree Plaza in downtown Atlanta. The results of the hotel's recycling efforts have been impressive. As of December 31, 1996, the hotel had diverted 19.6% of its waste from landfills, with the combined revenue and savings bringing a $1,300 benefit to the hotel each month. GHEP also used the Westin Peachtree Plaza's facilities to train others in the hotel industry. At the Georgia Hospitality Industry Recycling and Waste Reduction Seminar and Trade Show, held at the Westin in April 1996, 77 industry representatives were exposed to waste reduction issues, many for the first time.

P2AD: Partnering With Industry

Synthetic Industries (SI), a Chickamauga-based manufacturer of polypropylene textile fabrics and fibers, created S.I.E.R.R.A., or Synthetic Industries Environmental Resource Reduction Action, to cut in half the amount of solid waste it sends to landfills. With facilitation and participation from P2AD, eight teams of employees identify wastes, investigate waste reduction alternatives, and use financial analysis to determine the best solutions. While the paper/plastics, wood, cardboard, and metals teams seek opportunities to reduce solid waste, the process water and gas/air teams work to conserve water and energy resources. The vendor service team explores cooperative waste minimization opportunities with suppliers and customers.

During 1994, the first year of the project, the company disposed of 22 percent less waste than in the previous year. With the aid of outside recycling partners, SI helps turn more than 10 million pounds of polypropylene into picnic tables, benches, automotive parts, plastic lumber, plastic pallets and trash cans each year. In addition to recycling, SI seeks source reduction opportunities, such as using reusable, recyclable aluminum tubes instead of paper ones for several different applications. That change saved more than 700,000 pounds of cardboard last year.

LEAD BY EXAMPLE IN RECYCLING AND RECYCLED PRODUCT PROCUREMENT PROGRAMS.

- The Comprehensive Solid Waste Management Act requires State agencies to set up recycling programs in State-owned buildings {O.C.G.A. § 12-8-36}. The program demonstrates State government's commitment to recycling and serves as an example for other levels of government and private companies. GBA, coordinator of the effort, reported recycling 3,734 tons of materials in the 1996 fiscal year. The program recycles five grades of paper (99 percent of materials recycled) and aluminum cans. GBA collects recyclables from State agencies in 120 facilities within a 30-mile radius of the State Capitol, as well as from selected facilities in Athens, Milledgeville, and Augusta.
- DOAS reports that State government spent 91% more on recycled content products in FY96 than in FY94, the first year these expenditures were calculated. More than half of the $13.3 million spent on recycled content products in FY96 was for office paper products. To increase recycled content purchases, DOAS secured a statewide contract for recycled plastic and rubber park and facilities maintenance products; printed a catalog of recycled products available through statewide contracts and its Interagency Support Services, Surplus and Supply; and published regular editions of the *Recycled Product Purchasing Quarterly* for State procurement offices.

Solid Waste Grants and Loans Made to Local Governments

Another important component of the State's effort to improve solid waste management is assistance to local governments through grant and loan programs. In FY96, State agencies made a greater effort to share information on project proposals submitted by local governments so support would be more consistent with statewide solid waste priorities. Project proposals were also reviewed to ensure consistency with local solid waste management plans.

In FY96, the following State agencies awarded a total of $4.6 million in solid waste grant and loan funds. For a complete list, see Appendix B.

Georgia Department of Community Affairs

Local Development Fund (LDF)

The LDF provides funding for a wide variety of local government initiatives. In FY96, nine LDF grants totaling $84,418 funded solid waste projects and facilities.

Local Government Efficiency Grants (LGEG)

The LGEG program was established in 1993 by the Georgia General Assembly to encourage consolidation of local governments and/or local government services. In FY96, two of the 19 efficiency grants awarded supported solid waste management projects. Those two grants totaled $22,500.

Georgia Environmental Facilities Authority

Recycling and Source Reduction Grant Program

This matching grant program assisted 23 local governments with recycling and solid waste reduction in FY96. The awards, limited to $5,000 each, totaled $107,530. They funded projects such as recycling facilities, recycling and composting public information programs, recycling collection and processing equipment, wood chipping equipment, and other similar projects.

Regional Solid Waste Management Incentive Grants

These grants assist local governments in developing cooperative agreements to manage solid waste. The program distributes matching grants for recycling databases, feasibility studies, legal work, engineering, and other costs of forming regional authorities or recycling and solid waste management coalitions. In FY96, Regional Solid Waste Management Incentive Grants aided 12 regions, with a total of $532,244 distributed.

Low Interest Loans

GEFA makes low interest loans available to municipalities, counties, and local government authorities to fund environmental infrastructure needs. These loans help communities position themselves to attract economic development and help relieve the financial burden required to meet stringent state and federal environmental standards. In FY96, GEFA loaned $2,654,274 to four local governments for landfill construction and closure.

Environmental Protection Division

Scrap Tire Management Grants

This grant program helps communities develop scrap tire enforcement programs and related education efforts such as scrap tire recycling, prevention of scrap tire piles, and cleanup of scrap tire piles. Grants are funded through a $1 fee assessed on new tires sold within the state. Participating governments provide a 25% cash match. In FY96, $976,837 was distributed to 20 local governments and the Southeast Georgia Keep America Beautiful program. An additional $252,219 was distributed to eight local governments as reimbursements for tire pile cleanups.

Southeast Georgia Keep America Beautiful: Scrap Tire Management Grant

With the help of a Scrap Tire Management grant, 173,000 residents of 11 Georgia counties collected 190,311 tires for recycling.

Southeast Georgia Keep America Beautiful coordinated the two drop-off collection events at the regional level. City and county governments cooperated on the event activities, dividing the responsibilities and costs of staffing the collection sites, providing labor for loading tires, and advertising the events. The grant from the Environmental Protection Division (EPD) paid the cost of contracting with a company to transport the tires to an approved recycling facility.

Providing a regional collection made the project more cost effective for the rural counties, and having multiple drop-off sites within the region allowed greater participation. "It's a perfect use of the [scrap tire] money, to put it back at the local level to get rid of tires," said Karin Stenborg, director of the Southeast Georgia Keep America Beautiful.

Participating counties included Bulloch, Candler, Wheeler, Montgomery, Evans, Tattnall, Jenkins, Emanuel, Toombs, Screven, and Treutlen.

Appendix A: Georgia Landfills

County	Facility Name	FY96 Tons	Remaining Capacity	Estimated Fill Date
Appling	Appling Co-Roaring Creek Ph 1&2 (SL)	12,964	79,828	1/01/99
Baldwin	Central State Hospital-Freeman Bldg. (L)	83	55,849	11/29/81
	Baldwin Co-Union Hill Ch Rd Ph 2 (SL)	14,425		
	Baldwin Co-Union Hill Ch Rd Ph 3 (MSWL)	14,332	3,216,000	12/12/56
Banks	Chambers R&B Landfill, Inc. (SL)	28,114		
Barrow	Speedway-SR 324 Site 1 (SL)	280,211		
	Republic Waste-SR 324 (SL)	57,552	4,374,500	10/01/05
Bartow	Bartow Co-SR 294 Emerson (SL) Ph 1 (C&D)	52,235	336,450	9/23/17
	Bartow Co-SR 294 Emerson (MSWL) Ph 2	43,447	501,296	6/30/99
Ben Hill	Fitzgerald, Kiochee Church Rd Ph 2 (SL)	26,135	1,225,911	7/31/19
Bibb	Macon-Walker Rd Ph 2 (L)	97,231	1,097,032	4/30/02
	Mullis-Davis/Griswold Rds (Swift Creek Landfill) (L)	70,930	994,097	4/26/04
Bryan	Bryan Co-SR 144 Spur Ph 2 (L)	569		
Bulloch	Statesboro-Lakeview Rd (SL)	49,837	378,675	5/31/97
Burke	Burke Co-Clarke Rd (SL)	15,532	138,463	11/01/00
Butts	Butts Co-Brownlee Rd (SL)	63,273		
Camden	Camden Co-SR110 (MSWL)	72,265	3,332,367	12/01/19
Candler	Candler Co-SR 121 Phase 2 (C&D)	16,866	23,933	2/28/97
Carroll	Carrollton-S 166 (SL)	51,320	36,345	07/20/2190
Catoosa	Catoosa Co-SR 151 W Exp (SL)	106,760	397,500	6/30/98
Charlton	Charlton Co-Chesser Island Rd (SL)	4,965	183,724	6/01/10
Chatham	Chatham Co-Chevis Rd (L)	4,659	26,250	10/01/99
	Chatham Co-Sharon Park (L)	8,989	18,600	4/01/98
	Chatham Co-Thomas Ave (L)	14,605	63,900	4/01/99
	Savannah-Dean Forest Rd (SL)	57,584	110,222	10/05/97
	Superior Sanitation, Little Neck Rd, Ph 2 (MSWL)	255,029	8,334,255	12/30/20
	Clifton Equipment Rental Company, Inc. (L)	123,117	321,600	7/01/98
Chattahoochee	Ft. Benning-1st Division Rd (SL)	27,282	24,150	4/01/97
Cherokee	Cherokee Co-Swims-SR 92 Ph 4 (L)	94,892	98,000	1/01/98
	Cherokee Co-Sanifill/Pine Bluff Landfill, E Cherokee Dr (MSWL)	328,466	39,215,860	7/31/72
Clarke	Clarke Co-Dunlap Rd (SL) Ph 1	62,157	145,863	3/11/97
	Clarke Co-Dunlap Rd (SL) Ph 2, 3, 4	48,173	2,407,277	12/30/06
Clayton	Clayton Co-SR 3 Lovejoy #2 (SL)	28,406		
	Clayton Co-SR 3 Lovejoy Site #3 (SL)	57,914	4,836,014	7/01/24
Cobb	Cobb Co-Cheatham Rd Ph 2 (SL)	41,488	12,500	2/28/97
	Cobb Co-County Farm Rd #2 Ph 1,2,3 (L)	29,496	188,020	9/15/99
	Chambers-Oakdale Rd/I-285 (L)	90,928	353,183	10/01/97
Coffee	Coffee Co-CR 129/17 Mile River (SL)	64,875	356,250	7/31/98

County	Facility Name	FY96 Tons	Remaining Capacity	Estimated Fill Date
Columbia	Columbia Co-Baker Place Rd (SL), Ph 2	61,881	1,027,482	1/01/05
Cook	Cook Co-Taylor Rd Adel Ph 1 (SL)	18,876	142,364	6/30/98
	Cook Co-Taylor Rd Adel (L)		741	8/31/96
Crawford	Crawford Co-SR 341/Hopeville Rd (SL)	5,295		
Crisp	Cordele-US 41 S Ph 2 (SL)	78,325	133,933	4/08/97
Dawson	Dawson Co-Shoal Hole Rd (SL)	6,136	123,918	1/01/04
Decatur	Decatur Co-SR 309 Bainbridge Ph 2 (SL)	24,883	468,750	9/01/05
DeKalb	APAC/GA-Donzi Ln Ph 5A (L)	701,293	3,402,455	10/31/01
	DeKalb Co-Seminole Rd Ph 2 (SL)	186,393	96,050	5/31/97
	Land Reclamation-Rogers Lake Rd (C&D) (L)	87,513	81,000	2/28/97
	WMI-Live Oak #2 (SL)	1,393,693	7,544,800	7/30/00
	Phillips-Scales Rd C&D (L)	72,164	1,067,357	7/01/04
	BFI-Hickory Ridge (MSWL)	335,274	5,772,983	12/01/07
	DeKalb Co-East DeKalb Scales Rd (C&D)	23,714	4,220,403	1/30/36
Dodge	Dodge Co-CR 274 (Dodge Ave) Eastman (SL)	10,311	47,650	7/01/98
Dooly	Dooly Co-CR 101 (SL)	9,363	123,750	1/01/01
Dougherty	Dougherty Co-Fleming/Gaissert Rd (SL)	142,163	1,844,750	1/31/05
	Oxford Solid Waste LF-Turner Fld Rd (L)	30,605	214,838	5/01/98
Douglas	Douglas Co-Cedar Mt/Worthan Rd Ph 1 (SL)	45,097		
Effingham	Effingham Co-SR 17 Guyton (SL)	8,238	83,236	7/01/98
Elbert	Elbert Co-Hull Chapel Rd Ph 1 (SL)	17,114	113,020	5/31/00
Emanuel	Emanuel Co-SR 297 Swainsboro (SL)	20,418	38,833	5/30/97
Evans	Evans Co-Sikes Branch Claxton (L)	4,319	63,993	4/05/05
Fayette	Fayette Co-1st Manassas Mile Rd Inside (L)	44,270	59,148	10/08/97
Floyd	Floyd Co-Berry Hill Rd (SL)	104,324	978,890	3/01/00
Forsyth	Hightower Rd, Ph 4 (MSWL)	15,466		
Franklin	Franklin Co-Harrison Bridge Rd Ph 1 (SL)	12,577	375,000	9/20/10
Fulton	Atlanta-Key Rd (SL)	115		
	Atlanta-Cascade Rd (SL)	48	12,750	6/01/49
	Atlanta-Confederate Ave (L)	248		
	Atlanta-Gun Club Rd (SL)	88		
	Chadwick Rd Landfill, Inc. (L)	181,291	1,412,775	7/31/99
	Chambers-Bolton Rd. (SL)	119,899	779,979	8/01/99
Glynn	Eller-Whitlock Ave (L)	20,828	39,599	4/01/98
	Glynn Co-Cate Rd (SL)	38,386	311,966	8/13/01
	Glynn Co-Cate Rd (L)	9,601	101,192	12/19/00
Gordon	Gordon Co-Redbone Ridges Rd (SL)	54,426	10,378,136	06/28/2104
Grady	Cairo-6th Ave (SL)	20,630	306,750	2/01/04
Gwinnett	Button Gwinnett-Arnold Rd Ph 3 (SL)	63,109		
	WMI-BJ Landfill Ph 3, 4 (SL)	49,287	99,100	10/31/97
	UWL Inc-Richland Creek Rd (SL)	667,406	14,951,859	1/01/11

County	Facility Name	FY96 Tons	Remaining Capacity	Estimated Fill Date
Habersham	Habersham Co-SR13 (MSWL)	33,552	1,290,282	6/26/20
Hall	Hall Co-Allen Creek Ph A (SL)	47,890	79,662	4/30/97
	Reliable Tire Service, Monroe Dr. (C&D)	121,571		
Haralson	Haralson Co-US 78 Bremen Ph 2 (SL)	58,157	206,387	1/01/98
Houston	Houston Co-SR 247 Klondike (SL)	119,643	6,581,144	5/18/25
Jasper	Jasper Co-SR 212 Monticello (SL)	4,836	54,075	10/31/01
Jeff Davis	Jeff Davis Co-CR 20 (SL)	6,353	26,025	1/01/98
	Jeff Davis Co-CR 20 (L)	3,167	91,575	6/01/08
Jefferson	Jefferson Co-US 1 (Avera Rd) (SL)	16,808	47,605	12/01/97
	Wrens-Industrial St (SL)	4,330		
Jenkins	Jenkins Co-CR 54 (SL)	11,426	8,128	3/31/97
	Jenkins Co-CR54 Ph 2 MSWL & C&D Site	7,106	14,566	6/15/97
Lamar	Lamar Co-Grve St Ext (Old Mlnr Rd) (SL)	22,481	393,750	6/30/05
Laurens	Laurens Co-Old Macon Rd (SL)	5,245		
Liberty	Liberty Co-Limerick Rd (L)	6,819	27,003	4/24/99
	US Army-Ft Stewart Main Cantonment (SL)	31,464	1,625,685	1/01/16
	US Army-Ft Stewart Main Cantonment (L)	14,073		
Lowndes	Valdosta-Wetherington Lane (SL)	28,945	263,677	7/01/98
	Pecan Row Municipal Solid Waste Landfill (MSWL)	236,273	3,963,275	11/01/09
Lumpkin	Lumpkin Co-Barlow Homes Rd Ph 2 (SL)	9,271	14,894	7/01/97
Macon	Macon Co-SR 49 N #3 (SL)	19,975	311,850	6/30/97
McIntosh	McIntosh Co-King Rd (SL)	7,699	885,527	12/01/37
Meriwether	Meriwether Co-CR 98 Durand (SL)	17,999	34,768	3/01/97
Mitchell	Mitchell Co-SR 3A (SL)	14,961	0	7/01/97
Monroe	Forsyth, Old Brent Rd Ph 1, 2 (SL)	1,470		
	Monroe Co-Strickland Loop Rd (SL)	16,003	2,669,199	10/18/67
Murray	Murray Co-US 411 Westside (SL)	33,129	80,652	7/01/97
Muscogee	Columbus-Schatulga Rd W Fill Ph 2 (SL)	83,010	375,000	10/10/98
Newton	Newton Co-Forest Tower/Lwr Rvr Rds (SL)	48,776	256,844	8/01/07
Oglethorpe	Oglethorpe Co-US 78 C/D Landfill (SL)	25,467	187,846	3/01/05
Paulding	Paulding Co-Gulledge Rd N Tract 1 (SL)	20,615	36,222	9/01/97
Polk	Polk Co-Grady Rd (SL)	5,364		
Putnam	Putnam Co-CR 29 (L) & (SL)	30,310	495,274	9/30/04
Richmond	US Army-Ft Gordon Gibson Rd Ph 1-3 (SL)	9,516	4,535	1/22/97
	Richmond Co-Deans Bridge Rd Ph 2C (SL)	149,280	1,567,294	8/01/01
Spalding	Spalding Co-Griffin/Shoal Creek Rd Ph 2 (C&D)	7,557	288,240	2/01/10
Stephens	Stephens Co-SR 145 Ph 2&3 (SL)	2,621	6,116	8/31/97
Sumter	Sumter Co-CR 195 Ph 2 (SL)	24,015		
Taylor	Southern States -SR 90/SR 137 Charing (SL)	696,617	35,829,837	6/18/24
Telfair	Telfair Co-S 2316 (SL)	8,690	257,100	7/01/98
Thomas	Thomas Co-Thomasville/Sunset Dr Ph 2 (MSWL)	94,140	721,760	7/01/98

County	Facility Name	FY96 Tons	Remaining Capacity	Estimated Fill Date
Tift	Tifton-Omega/Eldorado Rd Ph 1 (SL)	33,499	22,273	11/30/96
Toombs	Toombs Co-S 1898 Ph 2 Vert. Expansion	27,863	191,250	7/01/97
Troup	LaGrange-I85/SR 109 (SL)	68,135	201,750	3/30/97
	Troup Co-SR 109 Mountville Ph 2 (SL)	2,305	243,509	10/15/12
Twiggs	Twiggs Co-US 80 (SL)	9,278	4,917,034	09/30/2250
Upson	Kersey-Firetower Rd/Jeff Davis Rd (L)	1,348		
Walker	Walker Co-Marble Top Rd Areas 1-5 (SL)	54,069		
	Lafayette-Coffman Springs Rd (L)	556	102,487	9/17/69
Ware	Ware Co-US 82 Waresboro (SL)	64,748	127,688	6/30/98
Washington	Washington Co-Kaolin Rd S #3 (SL)	13,291	1,608,383	1/09/54
Wayne	Wayne Co-SR23, Broadhurst (SL)	93,676	7,002,490	9/22/42
Wheeler	Treutlen & Wheeler Cos-SR 46 Ph 2&3 (SL)	8,496	194,884	7/01/98
White	White Co-Dukes Creek (SL)	12,494		3/15/97
Whitfield	Dalton-Old Dixie Hwy Ph 2 (SL)	118,224	216,621	12/31/99
	Dalton-Old Dixie Hwy Ph 4 (SL)		22,281	4/08/96
	Dalton-Old Dixie Hwy Ph 5 (SL)		125,052	12/31/96
	Whitfield Co-Dalton, Old Dixie Hwy Ph 6 (SL)		11,435,076	9/24/39
	Dalton-Rocky Face Ph 2 (SL)	26,112	131,210	9/30/98
Wilkes	Wilkes Co-CR 40 (SL)	18,707		6/30/98
Worth	Worth Co-SR 112 Sylvester Ph 1 (SL)	14,425	36,278	9/30/97
	Total	**9,776,025**	**214,577,427**	

Appendix B

State of Georgia Local Government Grant and Loan Assistance

July 1, 1995 - June 30, 1996 (FY96)

Total: $4,630,002

Regional Solid Waste Incentive Grant Awards (GEFA)

Columbia County	$69,850	Feasibility study for wood waste recovery
Dalton/Whitfield Regional SWM Authority	40,876	Expand activities, update SWM plan, waste characterization study
Floyd County	18,000	Expand recycling center for multi-jurisdictional office paper recycling
Gilmer County	75,000	Regional poultry management and diposal program
Gordon County	25,000	Regional SWM education program
Middle Georgia SWM Authority	10,000	Establish regional KAB program
Middle Flint RDC	3,290	Regional SWM and transportation model
Newton County	49,903	Regional SWM coalition assessment
Northeast Georgia Regional SWM Authority	75,000	Regional study for MSW landfill site
Toombs County	75,000	Regional solid waste facility
Treutlen County	15,325	Expand regional SWM facility study
Wilkes County	75,000	Regional SWM facility assessment
Total	**$532,244**	

Solid Waste Loan Program (GEFA)

Jurisdiction	Loan Amount	Purpose
Candler County	$1,104,274	Landfill Closure
Clinch County	200,000	Const. of Subtitle D Landfill
Crisp County	1,000,000	Landfill Closure
Gilmer County	350,000	Const. of Subtitle D Landfill
Total	**$2,654,274**	

Note: Some grants and loans listed here were mistakenly listed in the FY95 Solid Waste Management Annual Report.

Recycling and Source Reduction Grants (GEFA)

Bremen	$5,000	Establish recycling program
Brooklet	5,000	Purchase wood chipper
Bulloch County	5,000	Recycling public information
Catoosa County	5,000	Recycling drop-off centers
Chatsworth	5,000	Purchase wood chipper
Carroll County	5,000	Purchase recycling collection bins
Chamblee	5,000	Purchase recycling collection bins
Cherokee County	5,000	Recycling drop-off centers
Crawford County–Roberta	2,300	Recycling public information
Folkston	5,000	Yard trimmings collection trailer
Gordon County	5,000	Recycling collection trailer
Habersham County	5,000	Composting operation
Haralson County	5,000	Establish recycling centers
Hart County	4,330	Recycling processing equipment
Hazlehurst	5,000	Recycling collection bins
Irwin County	2,900	Recycling processing equipment
Manchester	5,000	Enhance recycling center
Montgomery County	5,000	Public information project
Monroe County	5,000	Recycling collection center
Johnson County	5,000	Recycling collection center
Rome	3,000	Composting project/information
Treutlen Co.-Soperton	5,000	Expand recycling facility
Vidalia	5,000	Establish recycling center
Total:	**$107,530**	

Local Development Fund—Solid Waste Related Grants (DCA)

Bleckley County	$9,250	Purchase wood chipper
Forest Park/Clayton Co.	$15,000	Establish recycling center
Hall County	$10,000	Composting and recycling project
Haralson County	$7,347	Establish recycling convenience center
Miller County	$2,265	Establish county-wide recycling program
Patterson	$3,806	Purchase wood chipper
Randolph Co./Cuthbert	$17,000	Establish recycling center
Troup County	$10,000	Establish recycling convenience centers
Whigham	$9,750	Purchase wood chipper
Total	$84,418	

Local Government Efficiency Grants—Projects Including Solid Waste Management (DCA)

Liberty County Solid Waste Authority	$15,000	Efficiency assessment for consolidation of recycling services
Seminole County (City of Donalsonville)	7,500	Efficiency assessment for consolidation of services, including solid waste
Total	**$22,500**	

Scrap Tire Management Enforcement/Education Grants (EPD)

SE Georgia KAB	$23,437
Savannah	55,434
Oconee County	6,725
Johnson County	56,246
Bartow County	72,345
Whitfield County	62,000
Athens/Clarke County	25,000
Claxton	69,311
Toombs County	55,395
Gordon County	70,459
Union City	44,260
Crisp County	75,548
Gilmer County	77,487
Douglas County	15,675
Montgomery County	51,480
Treutlen County	25,350
Bulloch County	14,000
Lowndes County	17,995
Madison County	62,391
Walton County	67,469
Wheeler County	28,830
Total	**$976,837**

Scrap Tire Management Clean-Up/ Reimbursement Grants (EPD)

Glynn County	$8,563
Wheeler County	60,225
Early County	27,751
Henry County	3,172
Newton County	49,980
Tattnall County	23,358
Berrien County	15,586
Coweta County	63,584
Total	**$252,219**

Appendix C: Additional Research

In addition to the 1996 Solid Waste Management Survey and Full Cost Report, state agencies undertook two other studies during the 1996 fiscal year to acquire a better understanding of solid waste management in the state.

- The University of Georgia's Carl Vinson Institute of Government examined the use of two possible models for calculating waste reduction—one based on population and economic growth as measured by employment and taxable sales, the other based solely on population growth. The study, entitled "The Effect of Economic Conditions on Meeting the Waste Reduction Goal in Georgia," concluded that efforts to improve infrastructure and educate citizens on waste reduction have Georgia "heading in the right direction," but measuring progress in reducing the waste stream has been unsatisfactory due to two factors.

  First, the quality of the data, particularly base-year data, is insufficient. Second, the population-based model Georgia has used to calculate reduction does not account for economic fluctuations, which can impact waste generation rates. When the population and economic growth model was applied to Georgia's 1994 disposal figures, the percentage increase in solid waste disposed was slightly less than the rate calculated using the population-based model (a difference of less than two percent).

  Though using a population and economic growth model may be more accurate, the report concluded that data currently being collected for Georgia are insufficient for calculating waste reduction using such a model.

- A telephone survey of 801 Georgians, conducted by Georgia State University on behalf of P2AD, asked questions to gauge recycling and household hazardous waste disposal habits of Georgia residents. Newspapers and aluminum were recycled by more than half of those polled, 59% and 56% respectively. A significant number of Georgians reported recycling plastic (48%), glass (37%), and phone books (34%). About one quarter of Georgians (24%) did not recycle anything. Most household hazardous waste products were either stored in the home or disposed of with regular household garbage.

Since the end of FY96, several other studies have looked at solid waste management in Georgia.

- A second telephone survey conducted by Georgia State University asked 857 Georgia residents about methods of handling yard trimmings. The DCA-sponsored survey found that most residents were already handling their yard trimmings in accordance with the September 1996, ban two months before its implementation. Though only 37% of the respondents who maintained lawns were aware of the impending ban, the majority were either leaving yard trimmings on the lawn, home composting, mulching, or leaving them for collection separate from household solid waste. Only 24% reported mixing yard trimmings with their other household garbage or taking them to a landfill.

- A DCA-sponsored study surveyed processors and end users of recovered materials to determine how much material recovered from Georgia's waste stream was being recycled. The figures generated were actual recycling tonnages; they were not extrapolated to arrive at estimates. When compared to total waste disposed, the

figures provided a conservative recycling rate, because not all end users and processors responded to the survey. The study determined that, at a minimum, over 4.7 million tons of material from Georgia were recycled in 1995, while, based on landfill reporting figures, 9.8 million tons were disposed. Consequently, 33% of the potential solid waste generated in Georgia in 1995 was recycled.

- A survey of landfill operators gathered information about composition and origin of wastes, landfill operations, tonnage, remaining capacity, prohibited wastes, and future operations. One significant finding, which has already shaped the direction of solid waste management in the state, is that about 60% of the waste disposed of in Georgia's landfills is commercial and industrial waste.
- The Southern States Energy Board released "Economic Benefits of Recycling in the Southern States" in August 1996. The study reported that Georgia has 23,186 employees in firms that process recovered materials or use them in manufacturing. To determine the economic activity associated with recycling, the study calculated the value added to every ton of recovered material processed or used in manufacturing on an annual basis. A total of about $41 million of value added was estimated for the State of Georgia. DCA contributed information for this study.

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